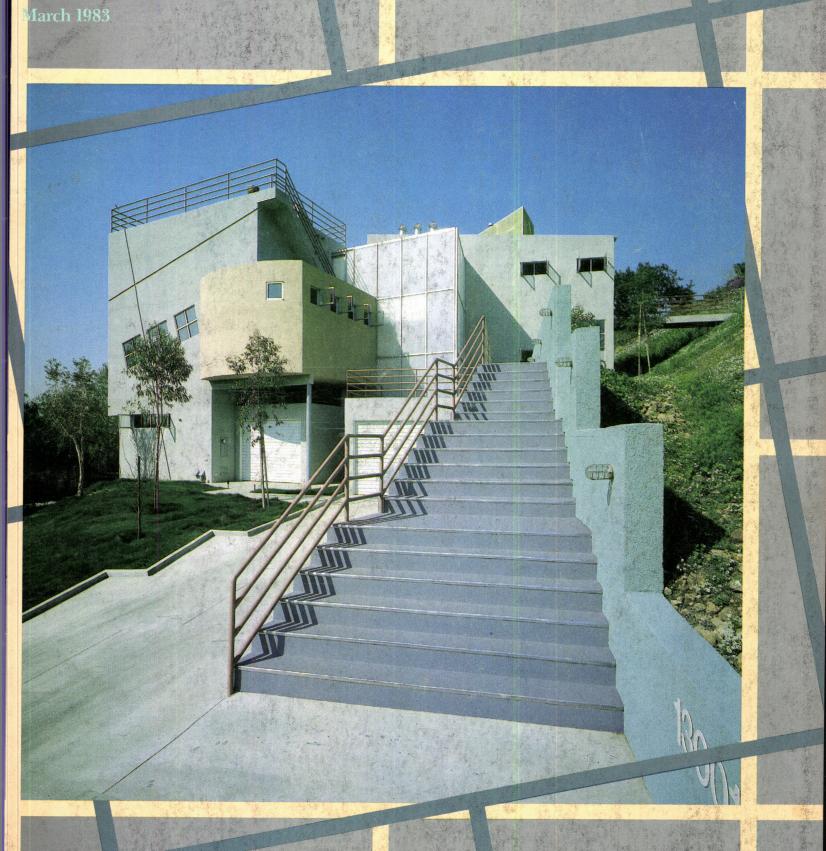
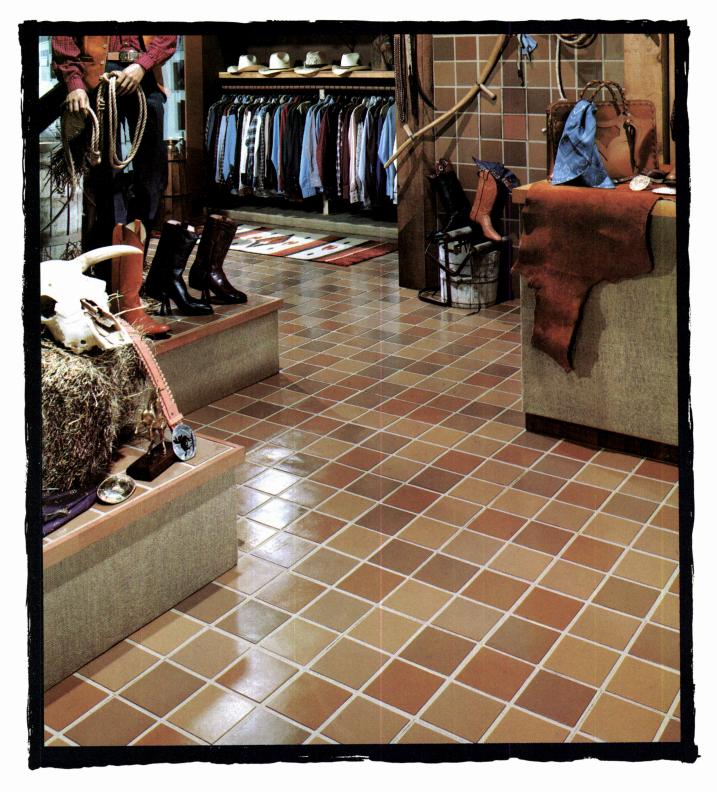
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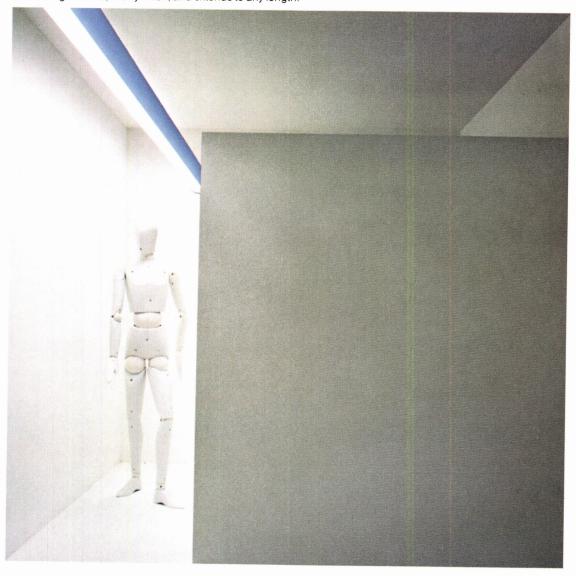
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Illustrated: 6" Lite Duct Wall Wash with specialized Softshine optics. Lite Duct is one of the 13 Longlite systems and comes in seven diameters and configurations, in any finish, and extends to any length.



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Editorial: Memories of Vietnam

Lighting World II

Program and some of the products to be shown at The International Advanced Illumination Exposition & Conference to be held in New York in April.

Architectural design

105 Introduction to California houses: Mind your mentors

The work of several young architects in Southern California reflects the influences of their teachers and their early affiliations.

106 Springwood Drive

A spec house in Orange County, Calif., by David Lee VanHoy and George Patrick Elian draws on condominium spaceplanning experience and New Wave design.

831 Pacific Street

A Design Group provides individual privacy and variety in six condominiums on a narrow lot in Santa Monica.

Sun-Tech

Sun-Tech townhomes, an 18-unit condominium in Santa Monica designed by Urban Forms, uses a Southern California

118 The spirit and the letter

Architect Peter Rose's expansion of law offices in Montreal employs varied historical references.

122 By Biscayne Bay

Rationalism is evident in the renovation of a house and the design of two spec townhouses in Florida by Spillis, Candela & Partners.

Mississippi Mud

The Mud Island park in Memphis, Tenn., combines a museum, recreational facilities, and a contour model of the Mississippi River, with major cities indicated.

Technics

143 Preventive medicine

Using building diagnostics helps to anticipate problems to prevent them from becoming serious.

150 Energy: A class by itself

The seventh article in the Energy-conscious design series considers redesign of schools for more efficient operation.

Specifications clinic: Exterior wall testing 157

Departments

- 10 Views
- News report
- 45 In progress
- 62 Calendar
- 158 It's the law
- 160 **Books**
- 168 Products and literature
- 175 P/A in April
- 178 **Building materials**
- Management personal time
- 186 Job mart
- 190 Directory of advertisers
- 191 Reader service card Loose subscription card in U.S. and Canadian issues



114

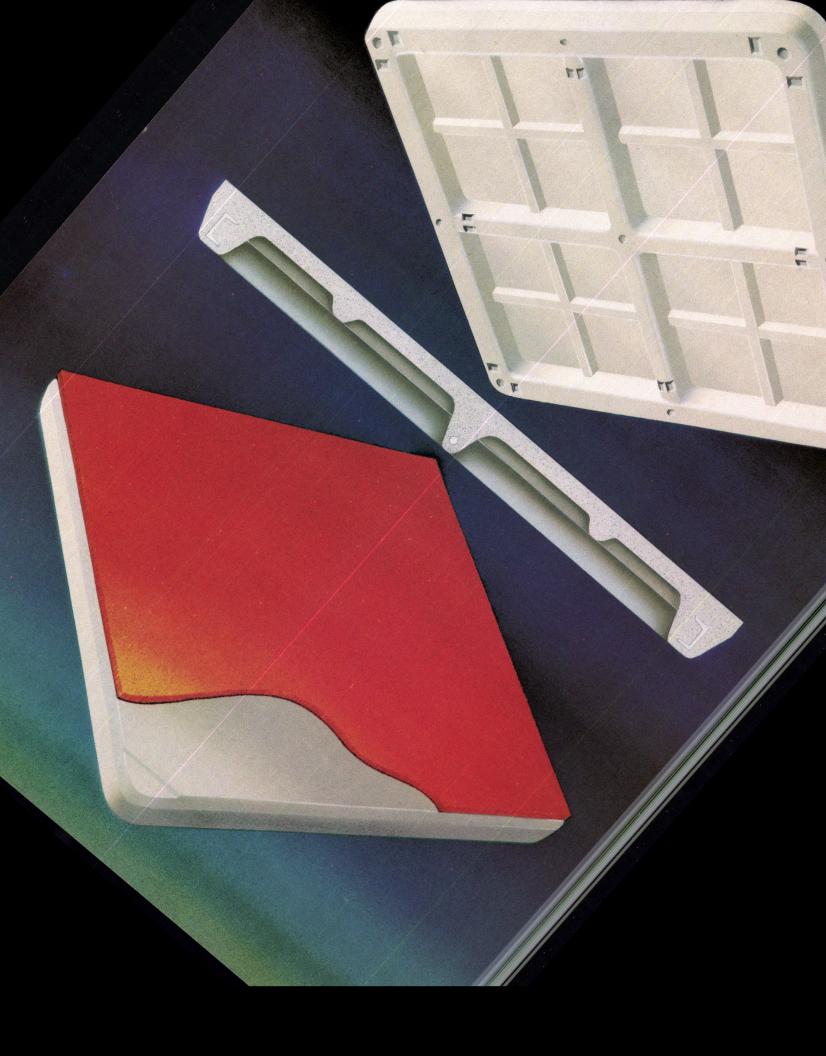


118





Cover: Springwood Drive residence, Cowan Heights, Calif. (p. 106). Photo: Projects.



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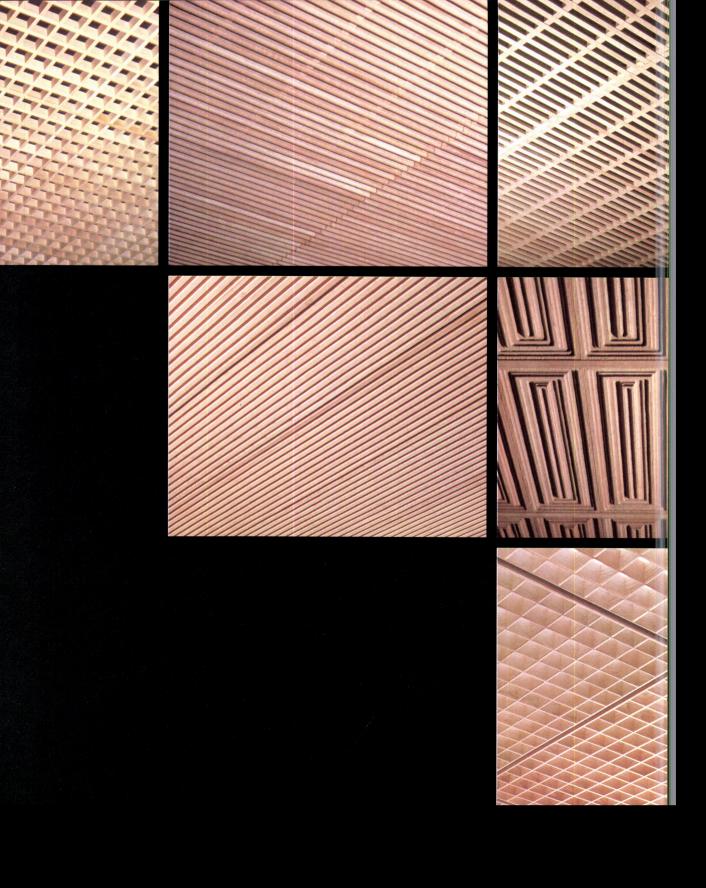
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Memories of Vietnam

Completed following an orderly competition process, the Vietnam Veterans Memorial will be compromised by new elements designed to pacify its opponents.

A year ago it seemed that the Vietnam Veterans Memorial along the Mall in Washington would proceed to satisfactory completion, in encouraging contrast to the divisive ordeal it commemorates. With a rare display of cooperation between government, veteran groups, and fund contributors, the design by architecture student Maya Ying Lin, winner of a well-run nationwide competition, was being realized with remarkable speed and fidelity.

Obstructive reaction against the memorial design, it now seems, should have been predictable. Abstract in concept and noncommital—as competition rules stipulated—on the U.S. role in Vietnam, the design was bound to disappoint those whose political or aesthetic positions were firmly to the right. After-the-fact criticisms of the competition included the lack of veterans on its jury and its recognition only of the 57,937 dead or missing, rather than all Vietnam veterans. Although the opponents included defectors from the sponsoring Vietnam Veterans Memorial Fund, they were unable to block approvals or discourage support from all major veteran groups.

The design was warmly praised by architecture critics of *The New York Times*, the *Washington Post*, and the *L.A. Times*, among others, but it had detractors in the press. Paul Gapp of the *Chicago Tribune* said it looked like "an erosion control project" and revealed the isolation of architects from public taste. Tom Wolfe took the occasion to make new attacks on the design elite. Vietnam veteran Tom Carhart's reference to it as a "black gash of

shame" was widely quoted.

Eventually, opponents gained powerful government allies in a campaign to alter what they had been unable to stop. Interior Secretary James Watt, whose department controls the site, withdrew his endorsement of the design and threatened to block its dedication last November unless the sponsoring fund agreed to changes, including addition of figurative sculpture and a flagpole.

As a result, the fund commissioned Frederick Hart, a runner-up in the competition, to provide a sculpture group. Intended for placement within the existing V of walls—with the flagpole behind the apex—Hart's

Photos from December 1982 show how the seemingly minimalist concept sets up relationships. Polished granite slabs, inscribed with names of dead and missing, reflect visitors and landscape and align effectively with revered landmarks.





work portrays three wary-looking, gun-toting GI's in battle gear—7½-foot-high bronzes on a barely visible base. Judging from photos of the maquette, these nonheroic, vaguely superrealist figures do not rise above the aesthetic level of mere illustrations. And though the sculptor claimed they would complement the existing memorial, they would in fact have shattered the abstract concept and made a mere backdrop of its walls.

At a required hearing on the proposed additions last October, Washington's Fine Arts Commission responded to large, articulate delegations pro and con by approving the insertions, but not in the central location. The commission indicated that it would prefer a location more removed, where the new elements could mark the entrance to the memorial. On the basis of this apparently savvy compromise, the Cooper-Lecky Partnership, architects of record for the memorial, drew up such a scheme for submission to a scheduled February 8 commission meeting.

But the sculpture-flagpole faction was not satisfied. In the last Congressional session of 1982, the House passed a virtuously worded bill, the effect of which would have been to place the new objects dead center, over the objections of the Fine Arts Commission. Senator Charles Mathias, alerted to its intent, stopped the measure in the Senate.

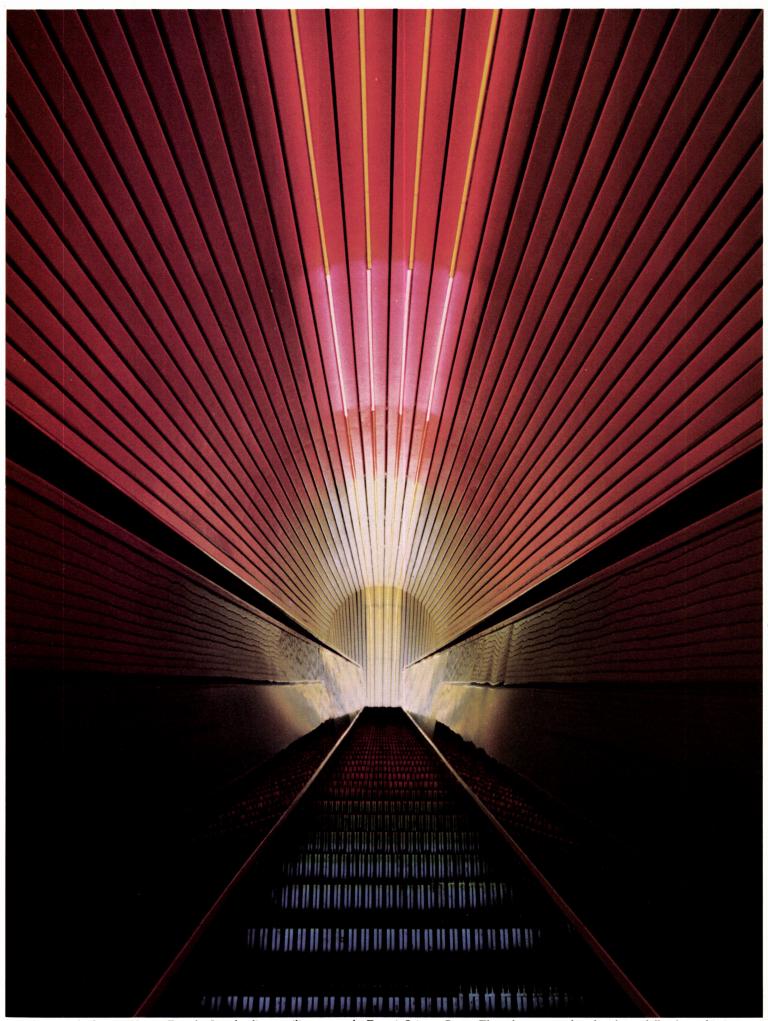
Aware of Watt's displeasure with the compromise siting, the AIA met with the fund and national veterans groups, and a third plan was developed for submission to the Fine Arts Commission. But only the Interior Department can submit plans for sites that it holds, and Watt balked for a while at presenting any plan. After a barrage of objections from the solidifying AIA-veteran coalition, Watt made a sudden about-face only six days before the commission's scheduled meeting. And so a resolution has been reached (p. 49)—an it-could-have-been-worse solution.

I have seen the memorial as built, and find it more effective than I expected. At a time when we are relearning the values of conventional forms and figurative art, its minimalism could be called dated—but it succeeds as the "contemplative" memorial called for in the the competition. What opponents see as merely a dark depression can as well be seen as a solemn, detached place, sheltering yet reaching out to distant landmarks and giving a special emphasis to the sky.

If no further obstructions are raised, we shall be able to contemplate this memorial for years to come. The other objects on the site are significant only as reminders that public taste must not be discounted in the making of

public art.

John Maris Dife



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Views

Correction on FCL

P/A's reference to the Chicago firm of Fujikawa Conterato Lohan & Associates as "disbanding" (Jan. 1983, p. 60) was misleading. Principals Dirk Lohan and Bruno Conterato maintain that the firm has been *renamed* FCL Associates upon the departure of former principal Joseph Fujikawa to establish his own office.

Academic identity

We have been reminded that we left off the place name in our reference to Joe Valerio (P/A, Jan. 1983, pp. 23–24), a professor at the School of Architecture and Urban Planning at the University of Wisconsin-Milwaukee. We had no doubt about the location of the university system's only school of this kind, but it deserves to be spelled out.

Credit extended

Clients for the award-winning applied research project "San Francisco: Historical Patterns of Urban Architecture" (P/A, Jan. 1983, p. 134) were Daniel Solomon, Project Director, University of California Housing Task Force, and Mark Winogrond, Project Director,

San Francisco Department of City Planning. Sponsor was the National Endowment for the Arts, Design Arts Program. P/A regrets the inadvertent omission of this information.

Credit correction

The photo of the Miami City Hall (P/A, News report, Jan. 1983, p. 27) was the work of photographer Dan Forer.

Granville Island: kudos and correction I was pleased to see the review of Granville Island's recycling by Sally Woodbridge (P/A, Nov. 1982, pp. 102–109). Her perception of this complex process and place, I think, was accurate and fair. It was particularly refreshing that she saw fit to comment critically (but appropriately), and to point out the Island's weaknesses as well as its strengths. It is only unfortunate she was not able to go into greater depth, as we did when we talked.

I would like to mention a mistaken credit (something which, as I am sure you are well aware, can get an architect's adrenalin going) on page 104. You have credited Norman Hotson with the original Creekhouse design. Norm in fact did do a face-lift of the building last year. I declined the client's invitation as I was very busy at the time. However, the original design was by Sankey Associates, now the Sankey Partnership, with William McCreery as project architect, as per my letter of August 27, 1982. William H. McCreery, MRAIC

William McCreery Architects Granville Island, Vancouver, B.C.

Further correction: The Granville Island Redevelopment Plan of 1977 was jointly prepared by Norman Hotson Architects, Urbanics Consultants Ltd., and Charles Torrence Ltd., Landscape Architects.

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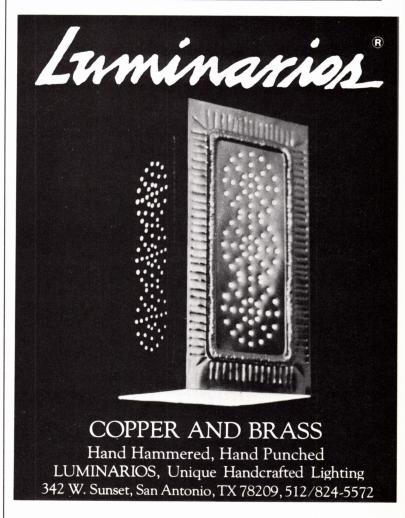
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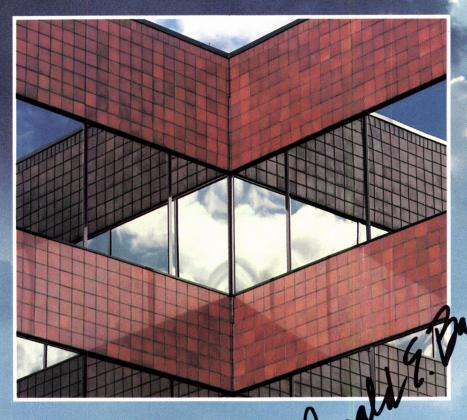
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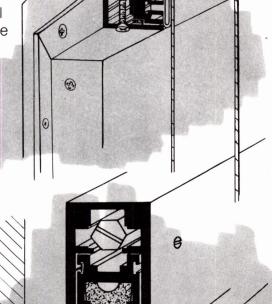
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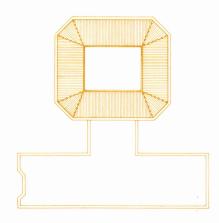


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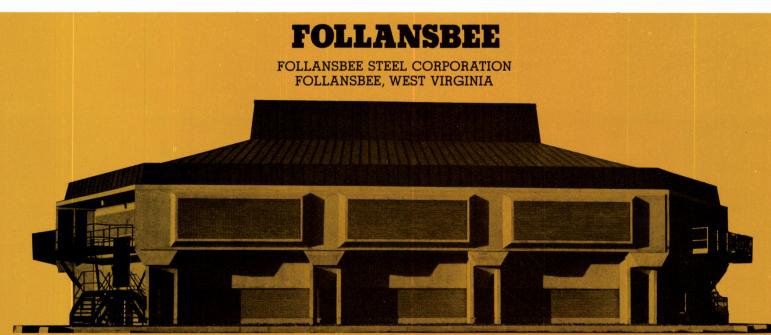
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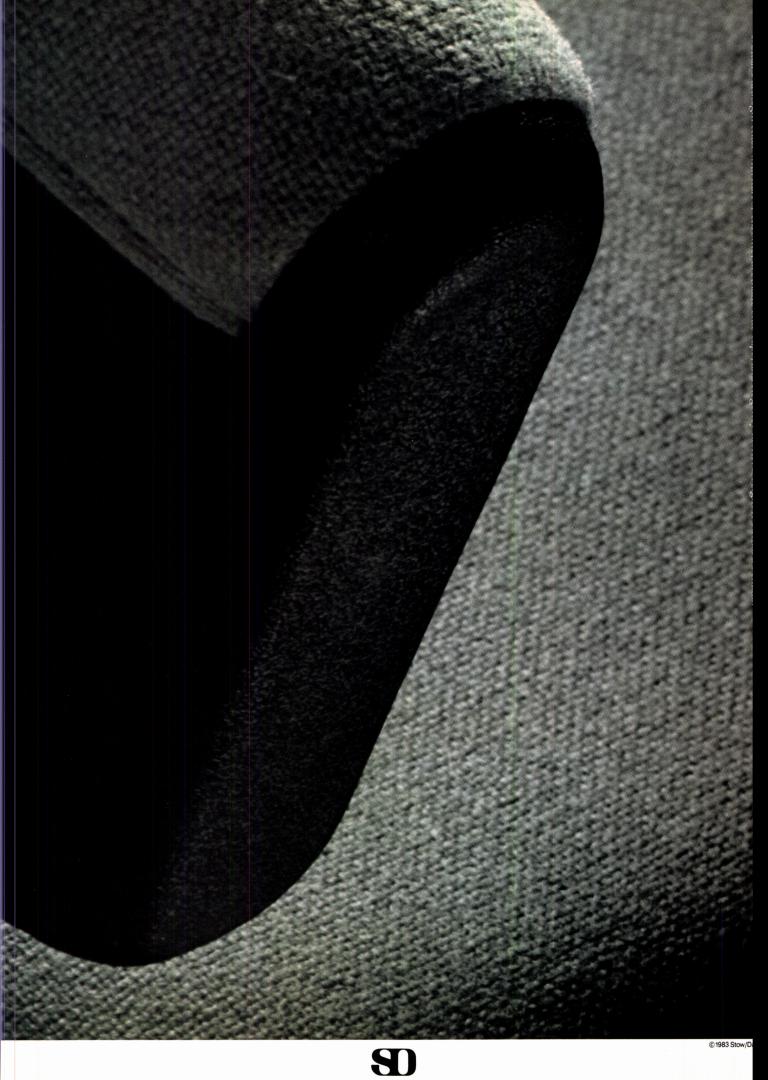
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Progressive Architecture 3:83



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uipment shown here, the latest color, paint and computer technology have been linked alues of the bases and colorants of Benjamin Moore's Moor-O-Matic Color System. In a es a sample of the color to be matched is "read" and a prescription developed to produce

Pencil points

UDC drops the ball

In a move ostensibly motivated by economic constraints, New York State's Urban Development Corporation has dissolved its architecture and design department.

¶ William Stern, the chairman of Governor Mario Cuomo's election campaign now nominated as Acting President and Chairman of UDC, announced an 'efficiency' plan to shift all responsibilities for design to the construction department and accepted the resignation of Amanda Burden, vice president, Architecture and Design.

¶ The move will effectively destroy the system of checks and balances existing between the construction department, which advocates economy, and the design department, which enforces quality design.

¶ It also signals the shift in emphasis evident in Stern's recent rhetoric away from the encouragement of urban and public amenities towards the promotion of high-tech industries in New York State.

Fiction or fact?

James Clavell's sensationalist Noble House, the novel that postulated a Hong Kong crash, may not have been far from the mark.

¶ Hong Kong property values have plummeted 50 percent or more in the last 18 months, and the financial sector is now showing a strain precipitated by the real estate crisis.

¶ The potential for fast and spectacular profits drew developers and bankers to Hong Kong in the late 1970s. But the cycle has since switched from boom to bust: The island is plainly overbuilt, and developers' debts are fast coming due. The problem is compounded by the uncertain status of Britain's lease on the colony, which expires in 1997.

¶ Analysts seem confident that this scare will pass, but Hong Kong's government may still press for reforms in the island's Wild West-style market.

Research centers to be dismantled

Cuts in the fiscal 1984 budget appropriations for the National Bureau of Standards would effectively eliminate the Center for Building Technology and the Center for Fire Research.

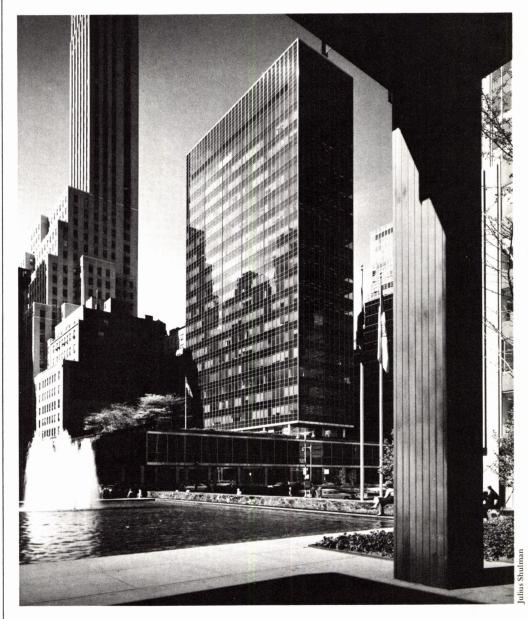
¶ Budget reductions will affect other NBS activities, but no other departments are to be terminated. The action reflects the Reagan Administration's policy of encouraging the private sector and state or local governments to assume responsibility for programs now conducted by the Federal Government.

¶ However, the possibility of private sector participation seems highly unlikely and even inappropriate for the two centers whose research has a long-term, often indirect impact on codes and standards, materials measurement, and other regulatory requirements.

NIBS seeks private funding

The National Institute of Building Sciences is facing a funding crisis. Ironically, the [Pencil points continued on page 49]

PA News report



Will Lever House be saved?

By the time this piece is published, a decision may have been made by New York City's Board of Estimate, which has until March 25 to approve or strike down the Landmarks Preservation Commission's designation of Lever House as a city landmark. But the fact that the building could survive the current attack does not in any way diminish the magnitude of the struggle or its significance. Just as Lever House became an architectural prototype both here and abroad, so the battle for its preservation may signify a new awareness of the ever-present danger "young" landmarks face.

Lever House, seen from the Seagrams Building.

The 31-year-old Lever House, nominated unanimously by the Landmarks Commission last November, is the first building to be so honored in the first year of its eligibility. It is perhaps this "youthful" aspect that its detractors consider justification for their arbitrary criticisms. Judged by the criterion of economic opportunism, Lever House is indeed a failure of sorts; its architect, Gordon Bunshaft of SOM, "failed" to fill even the lesser zoning envelope offered in 1950.

Plans now proposed by Fisher Brothers, the developers who purchased the land beneath Lever House,

SHCA proposed tower.

would replace the 1952 skyscraper with an undistinguished 40-story tower (three times the present volume) of reflective glass designed by Swanke, Hayden Connell Architects. Their rendering suggests a feeble and fashionable attempt at Art Deco and repeats long-discredited planning principles, most notably in a sunken plaza à la General Motors building on Fifth Avenue. Fisher Brothers would demolish Lever House and build to the maximum bulk allowed; a second contender, Park Tower Realty, would retain the original building (which it owns) and build an "addition" next door. At least this second scheme would save the beleaguered landmark.

But even if SHCA's proposed replacement were an architectural masterpiece, the loss of Lever House could never be condoned. The historical significance of the glass-and-steel sky-scraper has been substantiated by countless historical texts, which cite the building's catalytic impact on American architecture and its preeminent place as ambassador of American Modernism abroad.

Equally at issue is the action taken by Fisher's architects SHCA. The firm produced a "White Paper" unparalleled for its unsubstantiated criticism of Lever House, which is deemed a "mere footnote in architectural history . . ." that "lacks sufficient interest or value to risk disrupting the further evolution of upper Park Avenue." The authors offer no convincing proof, however, as to how the preservation of Lever House could stunt the economic growth of Park Ave.

Furthermore, their self-serving commentary invites telling comparisons: "... Rather than be preserved, (Lever House) ought now to give way to a space arranged according to a higher standard of urban design, which is not an abstract and self-indulgent statement, but is truly

designed for people." Lever House can indeed be faulted for a few rather primitive urban design initiatives, but the SHCA tower, looming over its depressed plaza, would surely do greater damage to the cityscape.

The White Paper, moreover, muddles this somewhat legitimate urban design complaint with pot shots at the structure's current deteriorated condition (as if maintenance, although a costly matter in this case, were a legitimate reason to withhold landmark status) and its lack of "structural honesty" (as if the International Style were not ultimately more a matter of façade than of fact). The paper's historical readings that try to denigrate Lever House by citing the U.N. Secretariat as a "masterpiece" of Modern architecture are debatable: Lewis Mumford, for one, roundly denounced the U.N. building in memorable prose.

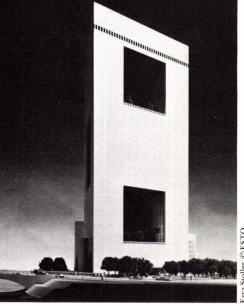
Fortunately, the campaign mounted by SHCA may have backfired, calling to arms an otherwise unorganized rank and file of preservationists, historians, architects, and critics. A recent letter to the New York Times signed by Henry N. Cobb, Arthur Drexler, Kenneth Frampton, I.M. Pei, Philip Johnson, Cesar Pelli, Henry-Russell Hitchcock, and James Stewart Polshek should in itself prove the strength of support for this "civic monument." The business of designating landmarks is always difficult, but questionable criticism commissioned by a developer should have no place in the proceedings. [DDB]

At MoMA: Scraping by

"Three New Skyscrapers" may sound like a mundane title for the exhibition currently on view at New York's Museum of Modern Art (through March 29), until you visit the show, at which time the word "new" seems rather extravagant. While attractively installed, the wealth of drawings, models, and photographs, intended to depict three different approaches to skyscraper design, tells us much more about the troubled state of the art, and that is hardly news. Indeed, one wonders why Arthur Drexler, director of MoMA's Department of Architecture and Design, chose to focus on these particular projects, since only one of them demonstrates any real imagination in tackling the problems of the modern skyscraper.

Far and away the most provocative of the three is Foster Associates' design for the Hong Kong and Shanghai Commercial Banking Corporation in Hong Kong, chosen for its innovative approach to structure. Three bays of differing heights are composed of exposed structural elements. Suspension rods carry some of the floors, while 144 prefabricated modules clamped onto the building's east and west sides incorporate services, utilities, and stairs, leaving floor areas unobstructed. Atriums, internal halls, and a mind-boggling array of elevators and escalators break the tower into "neighborhoods." Foster's virtuoso wielding of technological









Hong Kong & Shanghai Banking Headquarters (top). National Commercial Bank, Jeddah (middle). International Place at Fort Hill Square, Boston (above).

expertise and his Buck Rogers-like sense of futuristic drama may seem technomaniacal to some, but his tower's internal organization and its structural flexibility make a great deal of sense.

"A radical departure from the plan of conventional skyscrapers" is the way MoMA describes Gordon Bunshaft's design for the National Commercial Bank in Jeddah, Saudi Arabia, for Skidmore, Owings & Merrill. The "modest" 28story building is in fact a travertine behemoth. An equilateral triangle in plan, the tower's mass is pierced in three places by huge openings: two sevenstory loggias on one elevation and one nine-story loggia on another. The third façade, alas, does not fare so well, burdened as it is with a mute, monolithic service tower. The idea of aligning offices behind the loggias for shade and view is a good one, but there must be a way to do it that produces a less clunky, overscaled mass. Furthermore, this nearly completed building can hardly be called new, as we have seen it in project form for the past three years. SOM has more recent, more complex projects on the boards; why not choose one of them for this exhibit?

Finally, Johnson/Burgee's International Place at Fort Hill Square, Boston (for the Chiofaro Company) represents a solution (but not, one hopes, the solution) to the problem of integrating a tall building on an irregular site with smaller, older existing neighbors. Two tall towers are designed to appear as an accretion of six smaller, independent buildings, but the discrepancy between tall and short is so great that it defeats the scheme's purpose. Even more disturbing is the seemingly random choice of historicist appliqué. The towers have crenellated tops, while the short buildings are plastered with row upon row of Palladian windows, which lose both scale and meaning, like a word repeated over and over. A pie-shaped slice cut out of one of the "Medieval" towers reveals a reflective-glass curtain wall, a coy gesture that typifies the "Now I'm Modern, now I'm Post" schizophrenia that plagues skyscraper design today. Tellingly, the show includes a blueline reproduction of a preliminary sketch for the crenellation, with Philip Johnson's scribbled comment: "I find this ugly." He's not alone. [PV]

Chicago: At the Historical Society

As archivists of Chicago's architectural heritage, the Chicago Historical Society has often found its efforts to preserve the paperwork of designs thwarted by office trash receptacles. Over the decades, these steely perpetrators have deftly snatched architectural drawings, in particular sketches and preliminary designs, from their rightful place in the Society's archives.

In an attempt to circumvent this villainous paper depository, the Society is now exhibiting and collecting drawings and models that document the design evolution of three projects currently



At the Historical Society, Helene Curtis Headquarters, Laurence Booth.

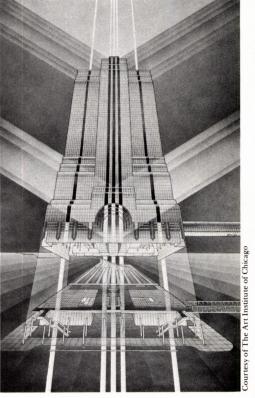
under construction: the Helene Curtis Industries Headquarters by Booth/ Hansen & Associates; the Board of Trade Addition by Murphy/Jahn-Shaw, Swanke, Hayden Connell Joint-Venture Architects; and One Magnificent Mile by Skidmore, Owings & Merrill, Chicago.

The exhibition, entitled "The Architect's Vision: From Sketch to Final Drawing," extends through June 15, 1983. In juxtaposing these particular projects, design methodology becomes a reflection of firm size and project scale. The design for the Helene Curtis renovation starts in Laurence Booth's pocket notebook with a rooftop pedimented temple, develops on vellow sketch paper in a series of rotundas, and takes its final form as a curved, tiara-ed penthouse on 1000H. Helmut Jahn has a larger firm and a larger notebook. The Board of Trade Addition quickly jumps from the notebook to a series of hardline options and culminates with internally lit plexiglass models and futuristic air-brushed poster drawings. Bruce Graham does not find notebooks in keeping with SOM's image: polished wood and plexiglass massing models convey the initial Art Deco designs, which give way to computer drawings and the consequent computer card façade design of One Magnificent Mile.

Given these paper options, fans can share the fantasies of future archivists and vote for their favorite scheme. [Deborah Doyle]

Deborah Doyle, a Chicago architect in private practice, is editor of The Chicago Architectural Journal, 1982.



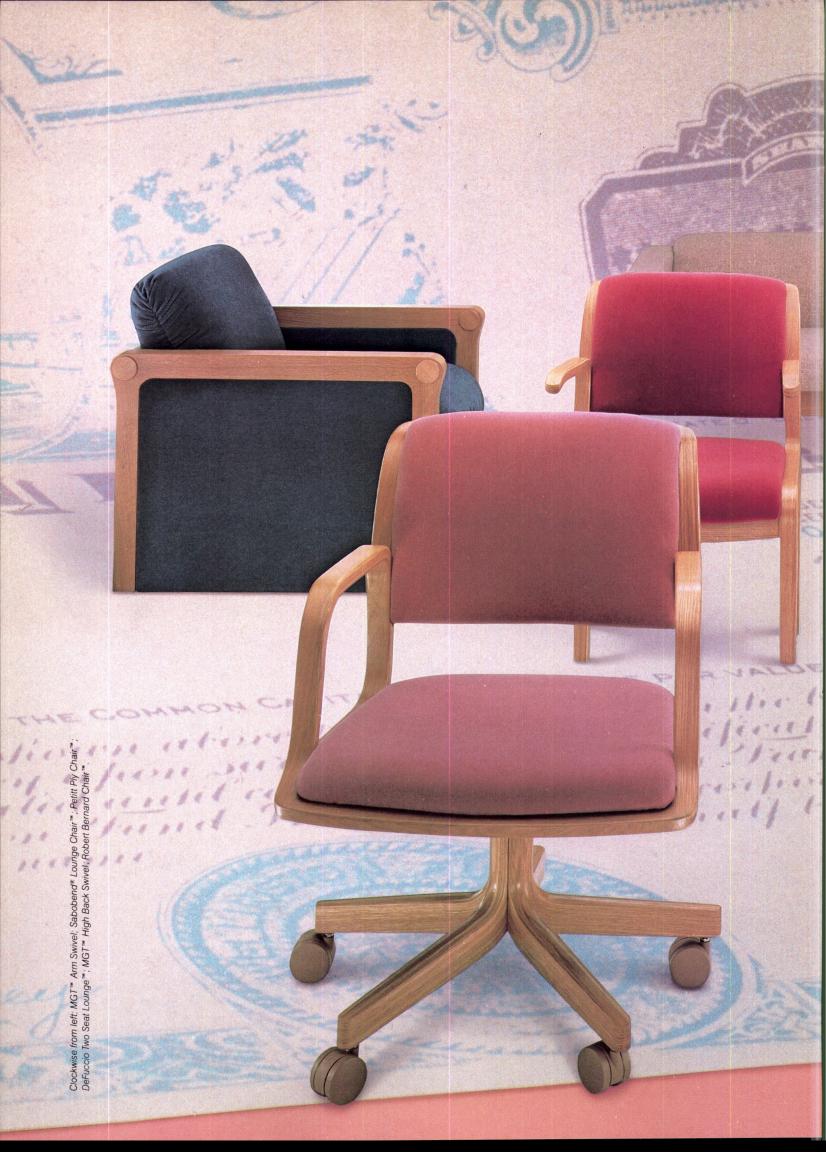


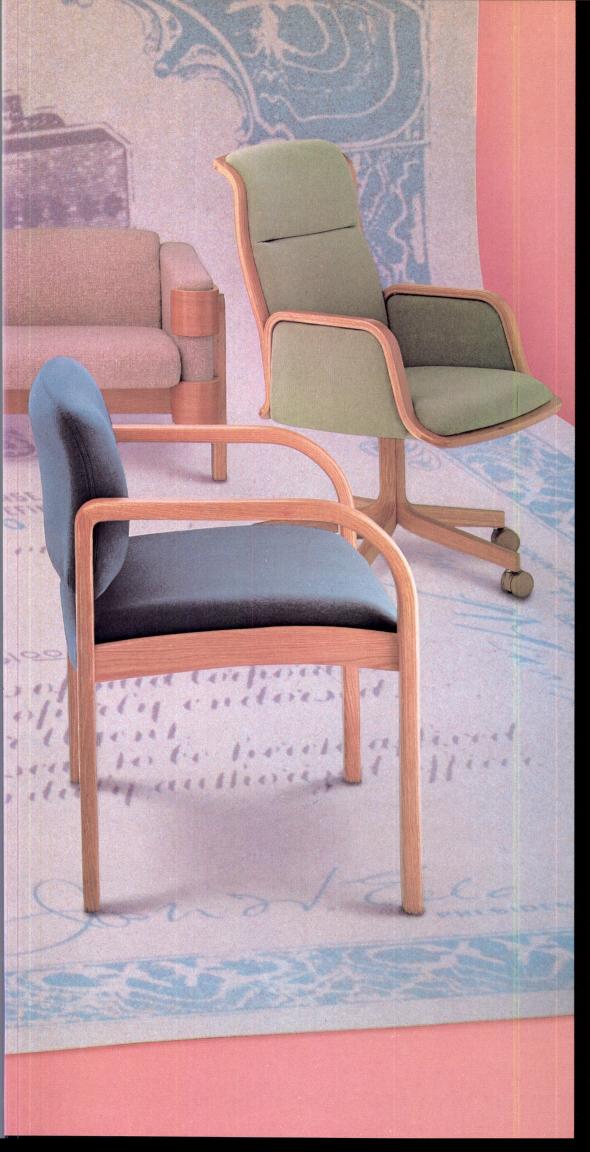
At the Institute, Coral Gables house, Stuart Cohen/Anders Nereim (top); Northwestern Terminal, Helmut Jahn (above).

Chicago: At the Institute

The Art Institute of Chicago has sought since 1979 to revive the moribund Burnham Architectural Galleries by appointing a curator of architecture, John Zukowsky, and staging a series of important exhibits. The latest exhibit, "Chicago Architects Design" on view until April 10, rounds out an exploration of the Institute's holdings of 40,000 drawings, shows some new acquisitions, and deepens our knowledge of Chicago architecture. The exhibit, mounted by Pauline Saliga, is accompanied by a handsome catalog of the same name (Rizzoli, \$21), which contains essays on the collection (John Zukowsky), on architectural drawing (Pauline Saliga), and on the conservation of architectural drawings (Rebecca Rubin). In addition, extensive entries accompanied by 138 drawings consider the work of 85 individuals and firms from August Bauer in 1870 to Deborah Doyle in 1982.

The current exhibit moves far beyond the traditional "Chicago School" for-[News report continued on page 31]





Furniture for the Executive Office.

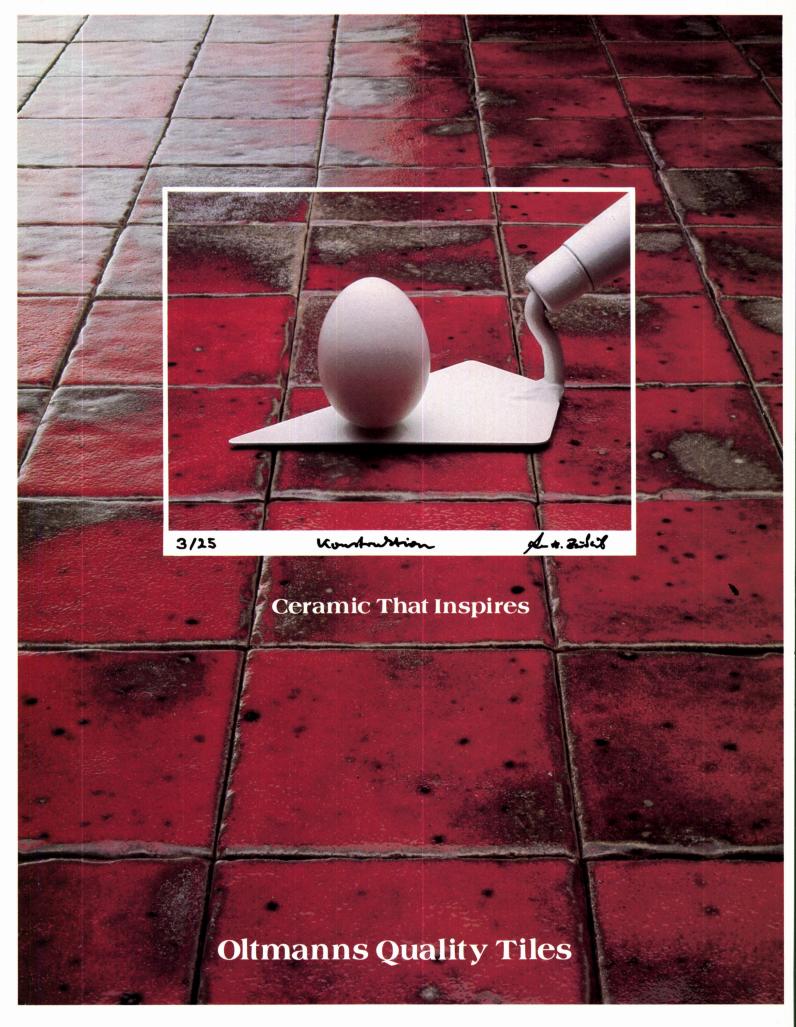
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mula: while Sullivan, Wright, Root, and Mies appear, their work is presented as only part of the more general pluralism and diversity characteristic of Chicago architecture. The current exhibit also emphasizes recent and present-day practitioners. An architect no longer has to die to get his drawings in the Art Institute! Projects by Helmut Jahn are shown; also exhibited is work by Gerald Horn, the very talented chief of design for Holabird & Root. Among the older talents rediscovered is James Edwin Quinn, a virtuoso in styles that ranged from the Spanish Colonial to the Streamlined, and Henry Dubin whose Battledeck House of 1929, drawn in a hard-edged manner, contains all the coolness, austerity, and promise of the new age.

The most difficult problem confronting any exhibit of architectural drawings is the need to convey their actual function and purpose. While the catalog essays attempt to note how drawings are used, the exhibit unfortunately wanders from that point. Architectural drawings have been, traditionally, explorations of ideas, illustrations towards an ultimate goal of getting the design built. The recent trend, sponsored in part by museums and galleries and well illustrated in this exhibit and catalog, has focused on the architectural drawing as a work of art in and of itself. Further, contemporary art movements (beyond Cubism) have had great impact on rendering techniques, as is the case for the Coral Gables, Fla., house designed by Stuart Cohen and Anders Nereim and rendered in a "naïve" manner derived from Latin folk paintings. Conversely, Helmut Jahn's rendering for the North Western Terminal Building appears to reflect video "Space Invader" games and current television ads for Wang Computers. The role of architectural drawing is clearly subject to subtle changes that need to be explored while we review and expand our understanding of its more traditional role. [Richard Guy Wilson]

Richard Guy Wilson is Chairman of the Division of Architectural History at the University of Virginia.

'Miracles' for 27th Street

An elegant statement of intentions bodes well for a design, but it does not in itself guarantee an equally convincing reality. The scale and proximity of architectural elements, not to mention the success of details and installation, inevitably decide whether the conceived message is perceived upon execution. An exhibit designed by Piero Sartogo and



Jon Michael Schwarting of Design Collaborative and mounted recently at New York's Urban Center is a case in point.

The Fashion Institute of Technology, located within New York's garment district, straddles one block of 27th Street with a hodgepodge of buildings unified only by their proximity. F.I.T. commissioned Sartogo and Schwarting to create a stronger image and sense of place for the school: Specifically, it asked for a master plan for the rehabilitation of the campus buildings and a redesign of its central street, designated to be closed in response to the 1977 Clean Air Act. To explain the design, the architects have created an exquisite exhibit called Transforming City Space.'

The design of the street attempts to tie the disparate buildings together by using very regular and repetitive elements: Along one side of the street will run a limestone-surfaced arcade punctuated by lateral lighting walls, and along the other, stylized flagpoles. The width of the street is effectively narrowed by these elements to create a more intimate scale, while the length of the street is shortened illusionistically by a progressive increase in the heights of the flagpoles and the girth of the cross The cross walls, tied into significant structural bays of the adjacent buildings, also break the arcade down into outdoor "rooms" that extend the indoor activity spaces. The linear space is punctuated by a small plaza dominated by a bell tower/sundial.

The specified materials are appropriately hard and urban and richly varied—granite, slate, limestone, sand-blasted glass block, steel—and the individual elements are, for the most part, beautifully designed and quite exciting in form. Notable are the "Constructivist" sundial cum bell tower and the "Secessionist" glass block and slate cross walls that incorporate lights.

In the controlled and intimate environment of the Urban Center room, the design argument presented by the exhibit is most palpable. The viewer is drawn by a room-height replica of the flag pole and a tightly effective collage mockup of the project's materials. Following in quick succession are a model of an out-



FIT proposal from 7th Ave. by day (left) and opposite view by night (above).

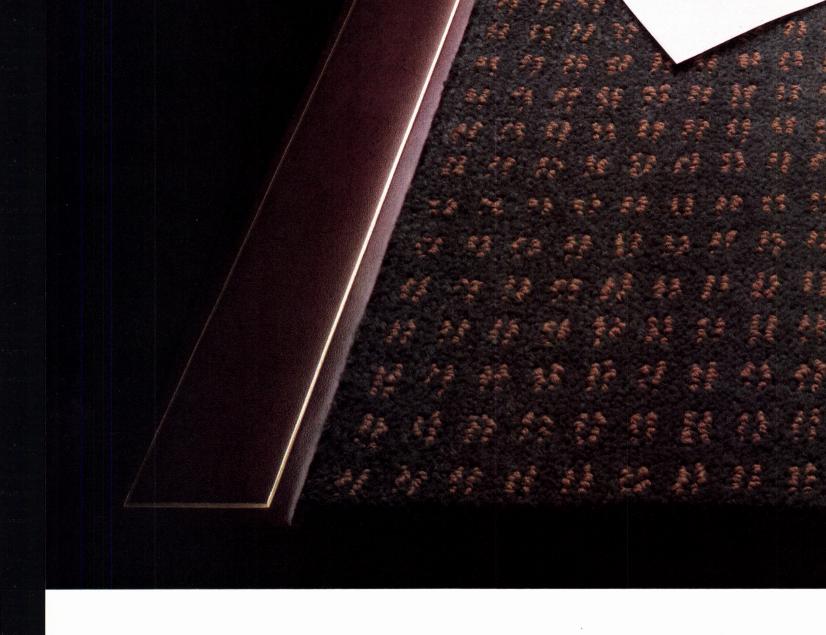
door "room," a slide presentation of existing street views, and an intricate and intriguing model of the entire site, complete with electrified light fixtures. The viewer is charmed, engrossed, and manipulated, his attention never straying but to be caught by some clever silkscreened image.

But it is the tight juxtaposition of closely ranged materials and forced perspectives that makes the design appear so convincing in the exhibition. Where in their design of the Italian Trade Center (P/A, Aug. 1981, pp. 94–99) the same architects overlooked the fact that flaccid materials and extended distances dilute their ideas about "perceptual space," in the realization of the F.I.T. street they may well find that slender elements compound rather than override visual clutter. None of the new elements has any real body . . . except at night. Then the lights within the glass block walls will glow, and the street will have a truly magical aura.

Some problems have been left unanswered by the Sartogo/Schwarting master plan. No solution has been suggested for the blank campus façade on 28th Street, an unsafe place for pedestrians. And while a special entrance should demarcate the pedestrian-only zone on 27th Street, the limestone gateway proposed at Seventh Avenue provides excessive separation from the neighborhood.

The design has yet to be reviewed by city and community boards, and an campaign fund-raising planned. "Transforming City Spaces" provides an ideal tool for these proceedings, as well as a plum for devotees of finely designed exhibitions. [SD] [News report continued on page 35]





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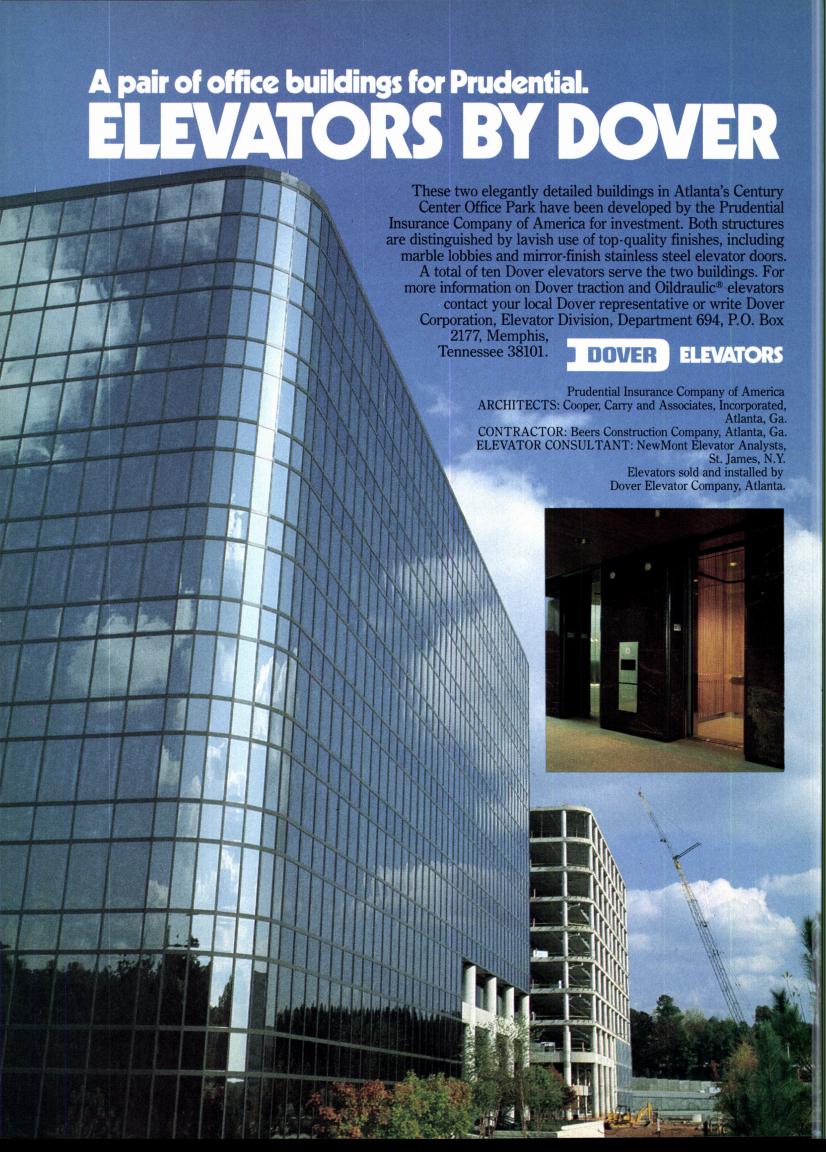
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Barcelon + Jang's winning design.

Triton Museum of Art

On Oct. 13-15, 1982, the Triton Museum of Art, located in the South San Francisco Bay city of Santa Clara, held a three-day design charrette on site for a new facility. The museum is currently housed in a set of small pavilions and in the Jamison-Brown house, a city landmark. The new museum will total 19,555 square feet broken down into quarters for the permanent collection, various exhibitions, storage and service space, administration, and public space. Allied urban design issues addressed included traffic management and the creation of a complementary relationship between the museum, its parklike setting, and the City Hall across the street.

The competition was limited to local firms with previous museum or gallery design experience. Forty-five firms submitted proposals; ten were interviewed, and five were chosen for the charrette held in the Jamison-Brown house. The five finalists were Barcelon & Jang, William Turnbull with Frank Gehry, Rosekrans & Broder, Robinson, Mills & Williams, and Spencer Associates/Bowers, Richert & Gratiot. The jurors were Joseph Esherick and Margaret Woodring, architects; Eldon Beck, landscape architect; Olney Smith, Santa Clara's director of planning; Tony May, artist and professor at San Jose State University; Orlando T. Maione, architect and president of the museum's board; and Jo Farb Hernandez, museum director.

Barcelon & Jang won with a straightforward solution which, in the jury's opinion, showed the most complete understanding of the design program. The entrance, detached from the façade, introduces a corridor or circulation spine through the building that affords the visitor constant visual access to the sculpture garden on one side and the exhibition spaces on the other. This processional way also recalls the corredor of Hispanic colonial buildings in California. The scheme preserves existing structures, giving the house a gracious forecourt. The winners also showed more concern for energy-conserving strategies (Phil Banta of SOL-ARC was on the team) through their use of earth berms around most of the building perimeter and through the engineering of lighting, heating, and ventilation.

Although all teams addressed the competition's stated priorities with varying emphasis, the scheme judged to be the most sensitive to the site and the one that conveyed the strongest sense of the art of architecture was that of Turnbull and Gehry. The irregular plan was partially masked in elevation by screen walls and colonnades of clipped vegetation. Inside, the free-flowing space suggested a sequence of pavilions expressed by different rooftop forms.

The costs for all competitors were high, varying up to \$10,000. Compensation of only \$3000 went to the winners along with the job, while \$1000 went to the losers. Logically, the likelihood of such losses should inhibit enthusiasm, but it seems that the popularity of such competitions is accelerating. The U.C. Santa Barbara Art Museum competition attracted close to 400 registrants nationwide, each of whom paid a \$50 fee. Following an initial screening in mid-April, the charrette will take place in mid-May, under the direction of William Liskamm who ran the Triton competition. The next few years may reveal whether the charrette is here to stay or is simply a sign of these times. For now, competitions are a boon to the small institution that otherwise lacks the resources to command publicity, and a range of design solutions. [Sally Woodbridge]





Turnbull/Gehry's submission.



Wright room at the Met.

Reconstructing Wright

Surveying the permanent Frank Lloyd Wright room and accompanying exhibit (Dec. 3, 1982-Feb. 27, 1983) at the Metropolitan Museum in New York, one cannot help wondering what the Master himself would have wanted. Wright preferred where possible to curate his own shows, and his hand would have been welcome here. Presented as one more period room in the Met's eclectic collection, the reconstructed living room, which was rescued from the demolished Francis W. Little house (1912-1914) in Wayzata, Minn., and installed under the direction of R. Craig Miller, is a powerful witness to Wright's domestic design ideals. The adjunct exhibit, however, does little to enlighten the public about the often ambiguous but undeniable impact Wright had on American and European architecture.

Instead, the show presents a collection of curios—dishware, desks and chairs, lithographs, and more—that offers variety but little analysis or perspective. Slim pickings, the random Wrightiana verifies the Met's own admission that its recognition of the architect is long overdue and its collection incomplete. Ironically, the Met has held one essential clue to Wright's career since 1918, when the architect himself sold the museum a collection of nearly 400 Japanese prints, some of which are included in this show.

The permanently installed Little living room suffered and suffers from compromises caused by the client. The ceiling is two feet too high, the furniture out of scale, the glazing patterns unusustiff (Edgar Kaufmann, Jr.'s Bulletin/Catalog provides explanations for these flaws); yet the overall aesthetic of the space remains representative of Wright. Moreover, the careful placement of the room within the Met's American Wing to allow views of Central Park hints at the integration of outside and in so typical of Wrightian homes. Unfortunately, restricted public entries (limited at best to ten feet into the room) prevent any real experience of the space; thus what the body cannot experience, the eye alone must enjoy. [DDB]



House, Origlio, Mario Botta, 1981.

Like a fist on the table

Two exhibitions at the Institut Français d'Architecture, Paris:

"Mario Botta, 1978-1982: Dans le Paysage comme un Poing sur la Table" Dec. 7, 1982 to Feb. 12, 1983. Catalog published by Electa-Moniteur, 17 rue d'Uzes, Paris 75002, 138 French Francs.

"Architecture Suisse, 1970–1980" Dec. 7, 1982 to Jan. 15, 1983, Catalog (in English) published by Birkhäuser Verlage, Basel, 125 French Francs.

The Swiss canton of Ticino has been attentively watched by architects and critics since the early 1970s, when a group of young architects, intent on making an architecture at once fundamentalist and regional in inflection, first emerged. The vitality of Ticinese architecture was reconfirmed by the deliberate juxtaposition of the two concurrent exhibitions, which closed the active 1982 season of the Institut Francais d'Architecture (IFA). "Architecture Suisse, 1970–1980," a traveling exhibition organized by Pro Helvetica and the Swiss Federation of Architects (which began its travels in Basel last year) presents a unified and official view of Swiss architecture of the last decade as an uncompromising, yet humane, extension of Team Ten and Brutalism. Against this selected panorama of Swiss architectural production, the Ticinese work of Mario Botta (P/A, July 1982, pp. 54-63) stands out assertively, as the title of the other IFA exhibition claims, "In the landscape like a fist on the table."

The themes of Botta's work were already established in his earliest houses: geometrical forms that, despite their rural domestic scale and a certain celebration of vernacular building materials and textures, maintain a fundamental autonomy. In their puristic volumes and the rigorous internal logic of their organization, they appear more as

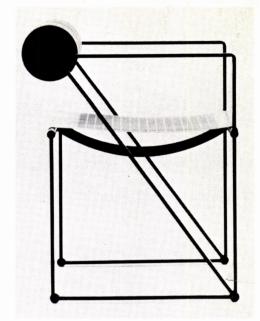
sculptural implantations than Modernist developments of the Swiss farmhouse. For over ten years, Botta has relentlessly used these small houses as an experimental laboratory, developing in them a set of formal and associational issues drawn from Aldo Rossi, Le Corbusier, and most evidently and fruitfully from his last master, Louis Kahn. The IFA exhibition and accompanying catalog are interim reports on this continuing research, updates on the monograph Electa editions published in 1978 on Botta's first productive decade. If the continuity of investigation is the most striking aspect of Botta's work, there are also subtle changes of emphasis. His geometrical permutations have attained at once a deeper historical resonance and a certain "stylish" overtone of pattern and materials. The tense reconciliation of symbolically potent forms and abstract compositions echoes increasingly with recollections of earlier architects. In short, Kahn's formal language is increasingly endowed with a most decidedly European historical memory.

Nowhere are these themes more richly explored than in the justly renowned "Casa Rotonda" at Stabio (1980), whose design history, traced step by step in a new French edition of the monograph on this enigmatic house, is a case study of Botta's design method. Exploiting the ambiguity of scale inherent in Kahn's formal vocabulary, Botta creates a building that alternates, like a gestalt form, between the intimacy of domestic shelter and the monumentality of geometrical sculpture. At once autonomous in its confrontation with the landscape and tied to it by materials and historical inflection, the Casa Rotonda takes a decisive stance in the landscape, which it seeks quietly to engage.

This philosophy, expounded in a rare theoretical statement by Botta printed at the end of the catalog, is developed differently in public buildings and urban projects. Numerous recent commissions or competitions for France, Germany, and Spain, as well as Switzerland, attest to Botta's increased international stature and commercial success. Attracted to "hinge" sites, where historic town centers abut unsympathetically the independent geometry of 19th-Century expansion, Botta's urban designs are essays in bridging, often quite literally, that physical and historical gap. Creating monuments that reconcile both by physical organization and historical reference, Botta's essays in contextualism sacrifice nothing of his belief in architecture as an a priori exercise. Like his small houses, the urban projects incorporate a dialogue with the environment. But if the initial cues from the environment are incorporated into the formal development of the program, the result is always monumental. Botta's quest for an architecture that asserts its own integrity seeks at the same time to render its surroundings more articulate. [Barry Bergdoll]

Barry Bergdoll is conducti

Barry Bergdoll is conducting research in Paris for his doctoral thesis from the Art History department at Columbia University.



Botta chair now at ICF.

Botta chair unveiled

Mario Botta, the Ticinese architect and member of the Tendenza (Italian Rationalist) movement has designed his first furniture piece. The Botta chair, to be introduced by ICF at West Week (P/A, Feb. 1983, p. 31WW), is now available in the U.S. through ICF in an arm or armless version. The rigorous, uncompromising geometry characteristic of Botta's built work (P/A, July 1982, pp. 54–63) shapes the chair's simple, severe lines. Its rectangular steel tube frame supports a perforated steel sling seat. Two rotating expanded polyurethane cylinders form the chair back.

A showroom exhibition of Botta's prototypes illustrating the design's evolution is on view in New York as of March 9.





1915 Eye St., section and view.

Awards update

The expansion of a post-World War I Tudor Revival apartment building in Washington, D.C., a project by Kerns Group Architects awarded a P/A Citation in 1981, is now complete. The Tudor façade and its four echoes remain a simple, witty solution subject to the same concerns voiced by juror Richard G. Stein: "After you've seen that witticism once, will you still enjoy it as much when you see it every day?" [News report continued on page 41]



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Because even the roof is by Pella.

And because there are three Pella Sunroom additions to accommodate all the requests for "window" seating here at the Amalgamated Spirit and Provision Company restaurant in Cedar Rapids.

The original building, only about five years old, was built with very few windows, which was the trend in restaurants way back then. But today the owners wanted to brighten up the place and expand seating at the same time. Adding Pella Sunrooms was the enlightened solution. Pella Clad Sunroof panels combined with Pella Clad Casement and matching Pella Clad Fixed Windows created over 60 linear feet of light and lively Sunroom space that pleases both the owners and the customers

The Pella Clad Sunroof. Modular for design flexibility. Fixed and ventilating Pella Clad Sunroof units can be joined side by side or stacked end to end to satisfy most dimensional requirements. All Sunroof units are solid wood construction of select western pine that's treated with a water and insect repellent preservative. Units are glazed with 1/8" tempered insulating glass. As an option, or if local codes require, units can be furnished with an inner pane of heat-strengthened lami-

Ventilating Pella Sunroof Units. All that gets through is sunshine. Three weatherstripping and

sealing systems - two in the frame and one in the sash - effectively seal out moisture and air on ventilating units. Operation is simple with a crank operated locking chain mecha-



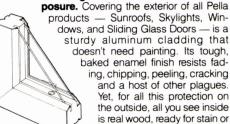
easy-to-handle aluminum extension pole where

Convenient control of light and privacy with the



Pella Slimshade®. These narrow-slat metal blinds are installed beneath the glass of Pella Sunroof and Skylight units. Adjustment is guick and convenient either directly by hand or with an extension pole. In Pella Clad vertical windows with the Double Glass Insulation System, the blinds are installed between the panes of glass where they're protected from excessive dust and damage.

An exterior cladding that can survive constant ex-



paint.

For more information on Pella Clad Sunrooms, Skylights,

Windows, Sliding Glass Doors and Wood Folding Doors, call your local Pella Distributor. You'll find your nearest Pella Planning Center in the Yellow Pages under "Windows". Call Sweet's BUYLINE or simply send this coupon.

Please send me your 1982 Pella	Catalogs.
Name	
Firm	
Address	1
City	
State Zip	
Telephone	

Mail to: Pella Windows & Doors, Dept. T35C3, 100 Main Street, Pella, Iowa 50219. Also available throughout Canada. This coupon answered within 24 hours. © 1982 Rolscreen Co.

Architect: David L. Brost, Architects & Planners, Cedar Rapids, Iowa

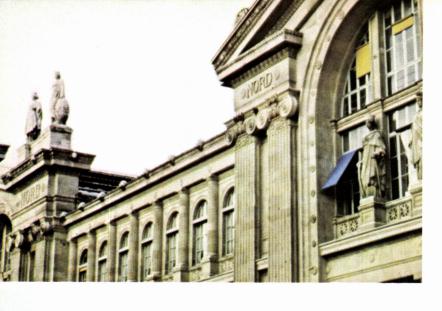
General Contractor: Shamrock Construction Co., Palo, Iowa Owner: The Amalgamated Spirit & Provision Co., Cedar Rapids, Iowa



Pella. The significant difference in windows and sunrooms.

Circle No. 373 on Reader Service Card

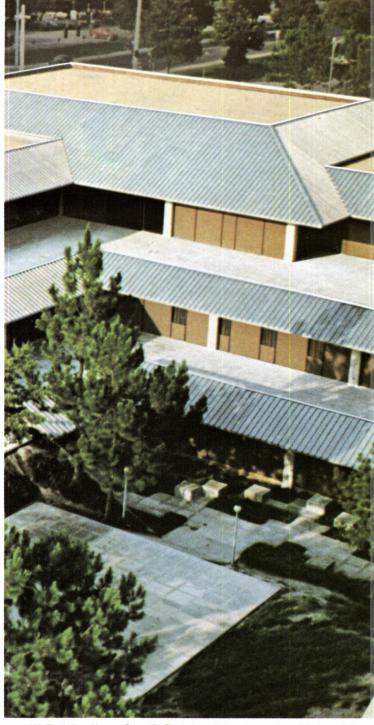






1863: North Railway Station, Place de Roubaix; Architect: Jacques Hittorf.

120 years ago this zinc roof was installed in Paris.



1982: Florida State Museum, Gainesville, FL; Architect: Vickery-Ovresate-Awsumb & Assoc., Orlando

120 years from now people may be talking about this Microzinc*roof!

Zinc is for many years.

Some things stay around a long time...and remain maintenance-free! That's the added beauty of Microzinc roofing systems. Barring earthquakes or other "acts of God," the Microzinc roof you specify today should still be around looking as good as ever, many years from now—and assuming normal atmospheric conditions remain water-tight, free of leaks, run-off stains or adjacent rotted materials. Get the full story on pre-weathered Microzinc 70 and mill-finish Microzinc 80. Write or call Ed Pejsa (free) at 1-800/251-7506.



News report continued from page 36







At the P/A Awards luncheon:
Frederick Schwartz, Nan Swid, and James
Stewart Polshek (top); Associate Editor
Thomas R. Fisher awarding Susan P. Gill of
ABRI (middle); Professional Editor James A.
Murphy awarding James R. Jennings, Bill
Stout, and Peter Shinoda of Jennings &
Stout (above).

P/A Awards at the Plaza

The Plaza Hotel in New York was the site recently of three design-related events sponsored by P/A. On Friday, Jan. 21, P/A honored winning teams and clients at the 30th annual P/A Awards luncheon. The 350 guests included P/A Award jurors—past and present—heads of local architectural schools and organizations, journalists, museum curators, and contributors to P/A. Preceding the luncheon a number of architects, engineers, and researchers participated in a roundtable about the P/A energy-conscious design series. Results of this meeting will be published in the April issue. On Thursday, Jan. 20, P/A honored winning advertisers and their agencies at the eighth annual AdAwards dinner. The P/A AdAwards, which are selected by a jury of architects, are presented for outstanding advertisements published in the magazine during the year.

Canadian Centre for Architecture

Although the Canadian Centre for Architecture had its official birth in Montreal in 1979, it has just begun to court attention. In November, architect Phyllis Lambert, the Centre's founder and director, flew to Toronto to launch *Photography and Architecture:* 1839–1939, a hefty book of 148 photographs selected from the CCA's collection of over 25,000 images. Numbered among its other treasures are 30,000 books (increasing at the rate of 5000 per year), some 5000 architectural drawings, and burgeoning archives.

"It's like a child," says Lambert of the CCA's rapid growth. Late in 1984, the Centre will move to permanent head-quarters in Montreal's historic quarters in Shaughnessy House on Dorchester Boulevard. Meanwhile the staff is cataloging the collection, developing study programs (under the direction of architectural historian Pierre du Prey), preparing a guide to the holdings of architectural records across Canada, and undertaking advanced work in the conservation of architectural drawings. Now that the CCA has entered an expansive phase, Lambert is jubilant: "It's all beginning from the beginning now." [Adele Freedman]

Adele Freedman is architecture critic for the Toronto Globe and Mail.

And its American parallel

On this side of the St. Lawrence, plans for a Center for the Study of American Architecture at Columbia University are most emphatically underway. An inaugural symposium, scheduled for April 21–24, 1983, will bring together scholars, critics, and practicing architects for the express purpose of establishing a theoretical basis for the Center's future programs.

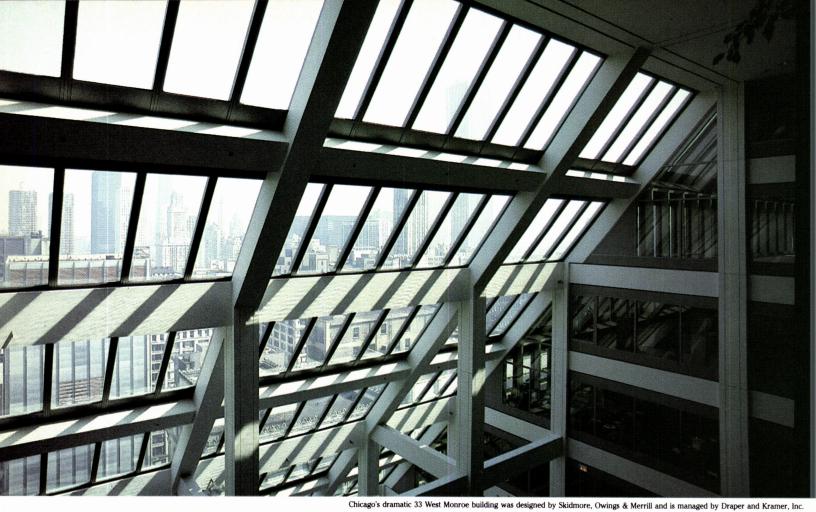
ter's future programs.

Entitled "American Architecture: Innovation and Tradition," the symposium is to be directed by David de Long, associate professor of architecture and chairman of the Division of Historic Preservation, Columbia; Helen Searing, professor of art history, Smith College; and Robert A.M. Stern, architect and professor of architecture, Columbia University. Papers presented at the symposium will be published in the first issue of *American Architecture*, the Center's planned journal.

The Center itself, established in conjunction with Columbia's Graduate School of Architecture and Planning and Avery Library, seeks to coordinate fragmented research efforts already underway and to promote future study. Its Board of Advisors—Henry-Russell Hitchcock, Ada Louise Huxtable, Edgar Kaufmann, Jr., Phyllis Lambert, I.M. Pei, Adolf K. Placzek, James Stewart Polshek, and Vincent Scully—intend the Columbia Center to be the first of a series of regional centers affiliated with existing academic institutions.

[News report continued on page 43]

	Kroin Architectural Complements	14 Story Street Cambridge, Massachusetts 02138	Telephone 617 492-4000 Telex 951650
Kroin		A lot of people recognize this kitchen faucet designed by Danish architect Arne Jacobsen. Most know that it was selected for The Design Collection, MoMA. Some even know that its brass.	They don't know that this series includes overhead showers, handshowers, fast-fill tub spouts and accessories. Most important, few are aware that the complete collection is available in
		washerless mixing valve was developed by Bradley Corporation.	10 bright epoxy colors, polished brass or chrome.
o1933 Kroin, Ire.		What a lot of people don't know is that Kroin offers an entire system of counter and wall-mounted fixtures for the kitchen, lavatory and bath.	So, now you know what you've been missing, don't miss the entire system of Kroin Sanitary Fittings. Circle 507 on information card.



How Laminated Glass helped move the great outdoors upstairs.

It was an inspired idea. Instead of a ground-level atrium, create a sunny, open space on the top eight floors of Chicago's 33 West Monroe building.



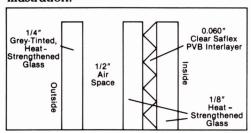
Laminated architectural glass, with its resilient Saflex® polyvinyl butyral interlayer, made by Monsanto, brought the idea to life.

To help protect people beneath this soaring expanse from glass fallout, laminated glass was the ideal choice.

Without foregoing any of the physical beauty of glass, it offers fallout protection. In the event of breakage, shards and fragments tend to adhere to the Saflex polyvinyl butyral interlayer.

To help protect building management and tenants from high energy costs, laminated glass was again the ideal choice. A wide variety of reflective coatings, tints and configurations can be specified to provide precise control of glare, solar heat, light transmittance, insulating properties and reflectivity.

The configuration specified at 33 West Monroe is detailed in the illustration:



Saflex® is a registered trademark of Monsanto Company

This configuration provides the following performance characteristics:

	Winter (Nighttime)	Summer (Daytime)
U Value	.49	.57
Shading Coefficient	.55	.55

Laminated glass, with a Saflex interlayer, gives you opportunities no other glass offers. That's why it ended up on top at 33 West Monroe.

If your aspirations are equally high, write us for a list of suppliers. Monsanto Polymer Products Company, an operating unit of Monsanto Company, Dept. 804, 800 N. Lindbergh Blvd., St. Louis, Missouri 63167.



PLASTIC INTERLAYER BY

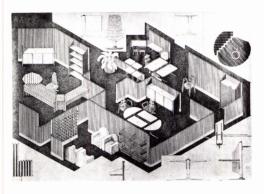
© Monsanto Company 1983

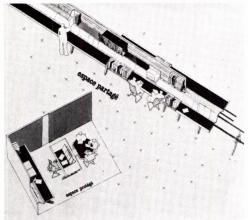
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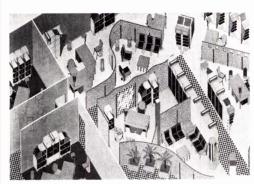
News report continued from page 41

Towards that end, the Center will stage a seven-part exhibition illustrating the relationship of local traditions to architecture in six regions. The show, whose general curator is John Zukowsky of the Art Institute of Chicago, opens with the symposium and is designed to travel in separate sections to schools and galleries in each region.

These ambitious efforts to coordinate the study of American architecture on a national basis will be strengthened by the newly established National Catalog of American Architectural Records serviced by the Library of Congress.







Designs by Gaetano Pesce, Italy (top); Marc Alessandri, France (middle); and Bruno Rosenzweig, France (above).

Office Furniture Competition results

Winners of the first phase of an International Competition for the Creation of New Office Furniture have been announced. Launched by the French Minister of Culture Jack Lang, the competition's first phase stressed design ingenuity. The ten winners will now work

with French industrialists to develop actual prototypes for manufacturing. A second jury meeting in Jan. 1984 will select five finalists.

A total of 220 projects were submitted to the international jury, which was chaired by Charlotte Perriand (France) and included François Barre (France), Mario Bellini (Italy), Kenji Ekuan (Japan), Yrjö Kukkapuro (Finland), François Mathey, Marc Emery (France), George Nelson (U.S.A.), Sebastien de la Selle, and Guy Vidal (France). The jury characterized its selections according to three basic categories: the "hypertechtendency integrating comnical" office puterized machinery, 'functionalistic" tendency upgrading systems of the 1960s, and the "at home tendency emphasizing a "domestic" opposition to the rigid office environment. The jury ranked this third category as the most innovative approach.

Winners included Peter W. Isherwood (United Kingdom), Marcel Ramond (France), Kotaro Nakamura (U.S.A.), Gaetano Pesce (Italy), Bruno Rosenzweig (France), Norbert Scibilia and Serge Guillet (France), Wendy Robin and Alan Stanto (U.K.), Philip J. Stone and Robert J. Luchetti (U.S.A.), Giorgio Carrozzino, Marc Delanne, Isabelle Hebey, Jean Pierre Morel, and Carmen Prieto (France), and Marc Alessandri (France).

National Sales Manager appointed at P/A

Charles Beckwith Selden, a member of P/A's advertising sales force for six years, has been promoted to the position of National Sales Manager. Selden joined P/A in May 1977 as District Manager of the New York and New England territory, and became Eastern Sales Manager in January 1982.

Selden received his Bachelor of Arts cum laude, with a major in history, from Amherst College in 1950. He is a member of the Architectural League of New York.

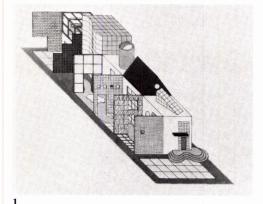


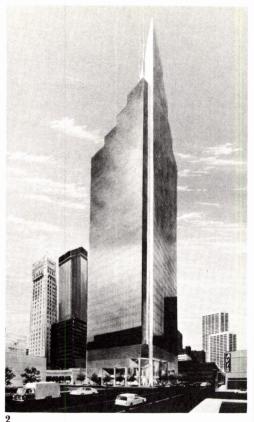
Charles B. Selden

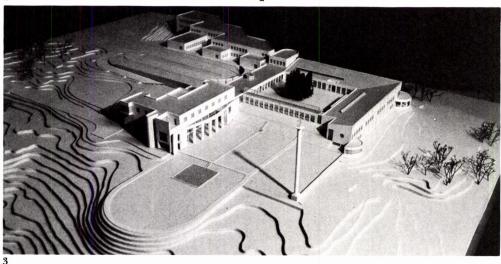
	Kroin Architectural Complements	14 Story Street Cambridge, Massachusetts 02138	Telephone 617 492-4000 Telex 951650
Kroin	The old American standard is all washed up.	There's a big difference between a faucet that you turn on and one that turns you on. It's the difference between Kroin Sanitary Fittings and every other fixture on the market.	Indeed, the MoMA was so impressed with our attention to innovation and quality, they selected our wall-mounted lavatory fixtures for The Design Collection.
		Kroin offers a selection of mixing valves, outlets, plates and coordinated accessories so complete that the	So, if you're tired of the same old thing, take a look at Kroin Sanitary Fittings. You'll see why people are calling us the
		possible combinations and mounting options are virtually unlimited.	new American standard. Circle 508 on information card.



In progress





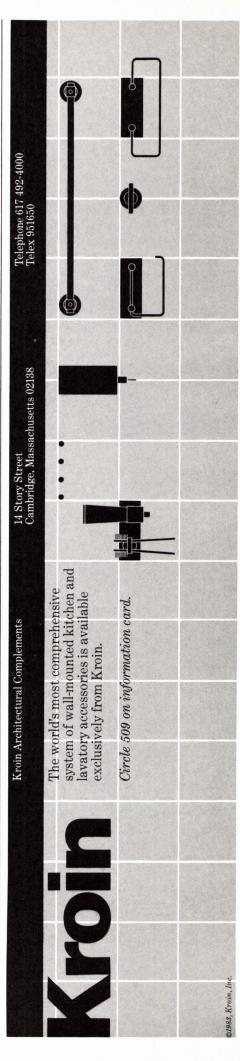


1 Maba House, Houston, Tx. Architects: Arquitectonica, Miami, Fl. This residence, proposed as an alternative to the conventional suburban house, is divided into five distinct volumes, each with its own courtyard. An undulant swimming pool connects the courtyards, which are visually separated by screens of different materials and enclosed by a freestanding wall. Organized as a linear sequence of rooms, the house is a familiar variation on the firm's use of playful, scenographic forms.

2 The Piper Tower, Minneapolis, Mn. Architects: Hammel, Green & Abrahamson, St. Paul. This expressionistic silvery tower on South Ninth Street in Downtown Minneapolis will rise 40 stories, its top set back in a series of terraces culminating in a diagonal tower. It will contain 700,000 square feet of net rentable office space, three levels of underground parking, and a restaurant at the skyway level, which bridges over into the city's walkway system. The three-story lobby has a recessed entrance. On the exterior, insulating silver-blue glass folds in at the

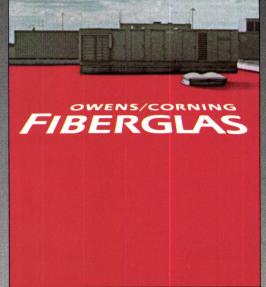
southeast and northwest corners to expose diagonal surfaces of satin-finished silvery metal. Renderings, unfortunately, suggest that this bold form could be clumsy in terms of its details and entrance design.

AB Volvo Corporate Headquarters Building, Gothensburg, Sweden. Architect: Mitchell/Giurgola Architects, New York. Set in a dense fir forest, the Volvo headquarters combines formal and informal planning principles. A central courtyard is flanked by the main reception hall, two office and conference wings, and a glazed gallery. Corporate offices are organized in a stepped extension along the western ridge of the hilltop site, providing occupants with views down through the woods to the sea. Guest and staff dining facilities face formal gardens. The \$16 million, 106,000-square-foot complex should be completed in 1984. [News report continued on page 62]

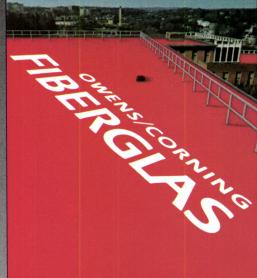




Double-layer Fiberglas insulation over FURI. 3 plies Perma Ply-R. Gravel surface.



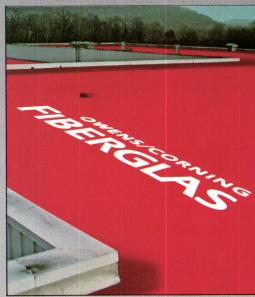
Single-layer Fiberglas insulation.
3 plies Perma Ply-R. Perma Cap® surface.



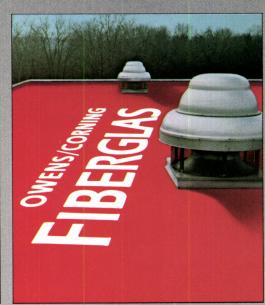
Single-layer Fiberglas insulation with taped joints. 2 plies Perma Ply-R. Gravel surface.



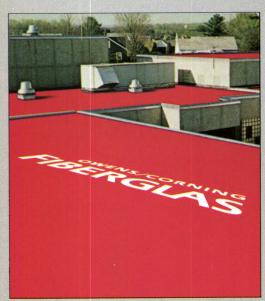
Double-layer Fiberglas insulation. 4 plies Perma Ply-R. Smooth surface*



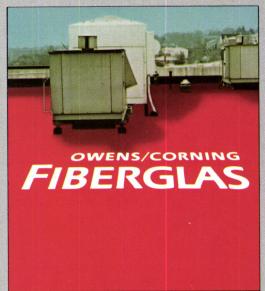
Single-layer FURI. Perma Ply No. 28 perf. base sheet. 2 plies Perma Ply-R. Gravel surface.



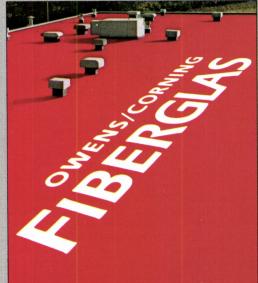
Single-layer Fiberglas insulation. New Perma Plus-2* system.† Smooth surface.



Double-layer Fiberglas insulation. New Perma Plus-2 system.t Gravel surface.



Single-layer Fiberglas insulation. 3 plies Perma Ply-R. Unsurfaced.



Perma Ply No. 28 base sheet. 2 plies Perma Ply No. 11. Perma Cap surface over wooden deck.

THE TOP ROOF FOR ANY BOTTOM LINE.

No two roofs are the same. No two applications will be either. At Owens-Corning, we offer a full range of specifications to fit virtually every roofing need. So we can put the best roof over your head at a cost that won't go over your budget.

GO RIGHT TO THE TOP.

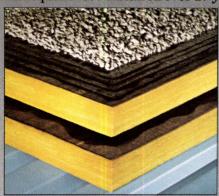
It stands to reason that to get the best roof, you have to start with the best roofing materials.

For instance, although it's underneath where you can't see it, your roof insulation deserves top priority. The chart shows you why Owens-Corning is your best choice.

We offer insulations for every application. In a full range of thermal values. A double layer of Fiberglas® or FURI® roof insulation can even provide R-values up to 40.

And the double layer serves a double purpose. It delivers better performance. By installing a second layer of Fiberglas roof insulation over the first and offsetting joints, you eliminate continu-

the highest tensile strength, best tear resistance and unequalled proven durability. Over four billion square feet installed over 17 years.



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The best products. The best contractors. The best guaranty. When you specify an Owens-Corning roof, you'll know it's not only cost competitive, it's the best you can

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Fiberglas Tower, Toledo, Ohio 43659.

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ous vertical gaps. So heat loss and gain is lowered. Membrane stress is reduced by as much as 10%. And roof life is increased.

THE PROOF IS ON THE ROOF.

We've built our roofing reputation on the most durable roofing felt ever. Perma Ply-R.®

Our unique continuous-strand glass mat has

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O.-C.F. Corp. 1983



Designer: Tom O'Toole, New York City

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It's not merely space in which to live. It's space that's *alive*.

Alive with undeniable beauty and exquisite taste.

Alive with the feeling of comfort and familiarity.

Alive with the personality of the owner. A personality sculpted in fine furnishings by the artistry of the designer . . . and Wood-Mode Cabinetry. Enlivening and personalizing any room of any home is Wood-Mode's forte. A forte based in part on an unrivaled variety of woods, styles and finishes—and in part on the unquestioned superiority of custom design and construction.

See more *living* space. Get *Picturebook VI*, with 44 pages in full color. For a free copy, send your name and address to Wood-Mode Cabinetry, Dept. 16, Kreamer, Snyder Co., Pa. 17833.

Circle No. 398 on Reader Service Card

NIBS is one of few institutions that might have bridged part of the gap left if the Center for Building Technology is eliminated.

¶ Created by Congress to coordinate building regulations and encourage the implementation of new technologies, the NIBS faces a complete cut-off of Federal funds in 1985. A membership and funding drive is slated for next spring.

HUD closes New Towns

The Reagan Administration has decided to close down HUD's New Towns program at the end of fiscal 1983.

¶ The program has had a troubled history. Nine of the 13 communities whose debts were guaranteed by the corporation failed economically. Only one community, The Woodlands outside Houston, can be considered a financial success.

¶ Opinions differ as to why the program, designed to create utopian communities on the basis of the best planning principles, failed. Red tape, recession, and mismanagement are three factors frequently blamed.

¶ The calculated demise of the New Towns program signifies an official abandonment of the principles of controlled urban and suburban growth that program sought, however unsuccessfully, to enact.

Watt's Vietnam policy

A compromise plan for placing a statue and flagpole at the Vietnam Veterans Memorial in Washington finally passed the Fine Arts Commission on Feb. 8. The new elements, added to placate critics of Maya Ying Lin's competition-winning design, will be set at a distance from her work, to mark an entrance to the memorial.

¶ Interior Secretary James G. Watt, who had pressed these addenda on the memorial's sponsors (Editorial, p. 7) had obvious trouble with his tactics for the siting showdown. On Jan. 30, he balked at submitting any of three alternative plans for FAC approval, opting for a "political consensus." After protests from major veterans' groups and AIA, Watt reversed on Feb. 1 and decided to play by the approval rules.

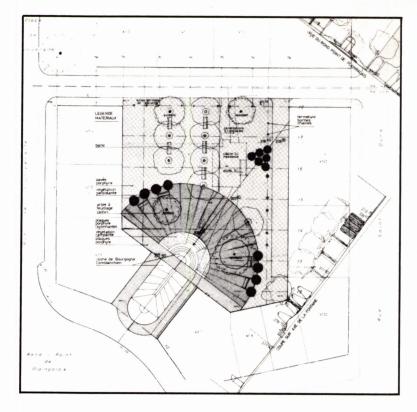
¶ Even this FAC-approved plan is subject to review by the National Capital Planning Commission.

Graves and Jaffe collaborate

Michael Graves has been appointed architect for the Summer Home of the Cincinnati Symphony Orchestra. He will be working in association with Cincinnati architects Carl Strauss and Ray Roush, Jr. Christopher Jaffe, of Jaffe Associates, Inc., will be acoustician for the project.

¶ The project will consist of a semienclosed amphitheater, a stage house, and pavilions for concessions on a wooded site on Old Coney Island, Ohio.

Revealing the Roman underground The famous Roman Forum, founded in the Seventh Century B.C., is at last to be excavated. Planned archaeological digs over the course of the next 15 years will destroy [Pencil points continued on page 52]



ARCHITECTURES CONCEPTS, INC.

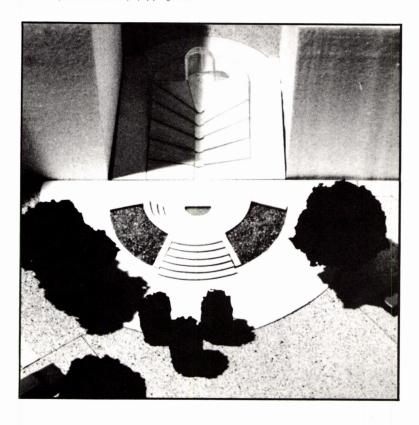
AN ARIZONA CORPORATION, BRANCH OF "ARCHITECTURES" – 8, RUE EYNARD – 1205 GENEVA – SWITZERLAND U.S. REPRESENTATIVE: JUDY ZUBER – 5921 E. INDIAN BEND RD – SCOTTSDALE, ARIZONA 85253 – (602) 948 5801 CUSTOM DESIGN OF MONUMENTAL SCULPTURES AND LARGE SCALE ART WORKS

WATER AS SCULPTURE

Fountain, Geneva, Switzerland

Set in a small, period square, the fountain transforms the water cycle into an environment at once restful and dynamic. Sprayed into a transparent dome, droplets condense — then course down the inner casing — gaining momentum and body before cascading over rocks and sloping steps into a quiet pool. Resting on the surrounding semi-circular steps, visitors are one with the harmony, melody and substance of the unending cycle.

Fountain, slabs of lined Burgundy stone, 4" thick. Armature, bronze, 1 5/8" diameter. Overall height: 12'. Four shaped acrylic glass elements, material thickness 3/8". 17 spray units producing mist, yielding 400 gallons per minute. Water collected and recycled by a pump of three atmospheres of pressure. Three waterproof floodlights. Base and surround paved with dark red porphyry flagstones.



Nobody Oul In quality, variety and availability

Ford Glass now offers the broadest monolithic line of solar control glass available with extensive heat reduction/light transmission options and coating colors to accent any architectural style.

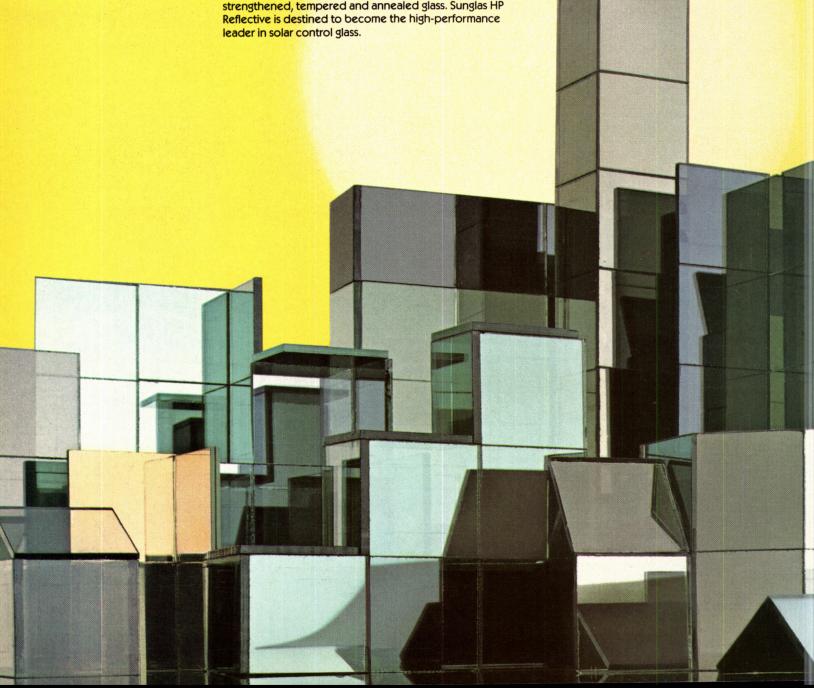
Sunglas HP Reflective

Our newest high-performance reflective glass can block 80% of the sun's heat and can also reduce conductive heat loss up to 20% compared to normal glazing. Sunglas HP Reflective is available in both high/low reflectance, with a choice of three coatings, four glass substrates and four light transmission options for a wide spectrum of color/performance choices. Sunglas HP Reflective is available in monolithic, insulating glass, spandrel, heat strengthened, tempered and annealed glass. Sunglas HP Reflective is destined to become the high-performance leader in solar control glass.

Sunglas Reflective

Our popular medium-performance solar control glass, Sunglas Reflective, is available in either Green or Bronze substrate and can block 65% of the sun's heat. Sunglas Reflective Green also lets in over 40% more natural daylight than its closest competitor. Sunglas Reflective with the coating glazed to the outside appears neutral silver. Sunglas Reflective Green and Bronze can be glaze with the coating inward to achieve a subtle emerald green or earth tone effect. Sunglas Reflective can be fiel cut and fabricated. It's the best choice in medium-

performance reflective glass.



Blasses Ford solar control glass.

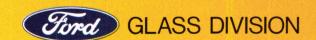
esidential Sunglas

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the Via dei Fori Imperiali, opened in 1933, to expose the hidden commercial and governmental heart of ancient Rome.

¶ Other plans are reported to include the restoration of the Markets of Trajan, a multilevel crescent of shops built in the Second Century A.D., the excavation of the Forum of Nerva and creation of a new park around Trajan's Column, and the reinforcement and repair of ruins already excavated. The master plan also projects a new museum complex designed for the display of art objects and artifacts now languishing outside of public view.

The Tower of Babel?

Frank Lloyd Wright's mile-high tower is still a futuristic fantasy, but earthbound ef-



Weese tower in Chicago.

forts may yet reach that goal.
¶ The latest bidder is Chicago developer
Stanley Raskow, who proposes a 210-story,

Stanley Raskow, who proposes a 210-story, \$2 billion high-highrise containing a 2400-room hotel, 800 residential condominiums, and offices with appropriate amenities including restaurants, theaters, retail, and rooftop observatory.

¶ At 2500 feet, the 9 million-square-foot minicity designed by Harry Weese & Associates, Chicago, makes the 1454-foot-tall Sears Tower, its nearest contender for the title of tops, seem positively petite.

Battery Park potpourri

Preliminary plans for Rector Place, the second phase of residential construction at Battery Park City, are now on the boards of eight architectural offices.

¶ The list, now finalized, includes Davis, Brody & Associates; Charles Moore with Rothzeid Kaiserman Thomson; Attia Perkins; Ulrich Franzen/Keith Kroeger & Associates; Bond Ryder Associates; The Gruzen Partnership; Conklin Rossant; and James Stewart Polshek & Partners.

¶ The Rector Place package was deliberately subdivided to avoid superblock blight and simulate New York's "natural" mix of multiple sizes and styles. An early public preview of the as-yet-unreleased drawings promised a variety sadly lacking in the first residential complex, Gateway Plaza, now occupied and near completion.

Vonier named to NIBS Ex. Comm.

P/A correspondent Thomas Vonier has been appointed to the National Executive Committee of the National Institute of Building Sciences, created by an act of Congress. Vonier, a Washington, D.C., architect, will fill the design professional seat.

Norman Coplan awarded by AIA

P/A Contributing Editor Norman Coplan was one of 14 individuals elected honorary members of the AIA.

¶ Coplan, legal counsel to the New York State Association of Architects/AIA, was cited for his books and P/A column 'It's the Law,' contributions which are 'read and relied upon by architects in all sections of the United States,' according to his nominators.

Mellon gift

Fifty paintings, 24 sculptures, and 19 prints and drawings by 19th- and 20th-Century American and European artists have been given to the National Gallery of Art by Paul Mellon. The collection includes works by Renoir, Monet, Bellows, Villon, and Vuillard.

Gallery opening

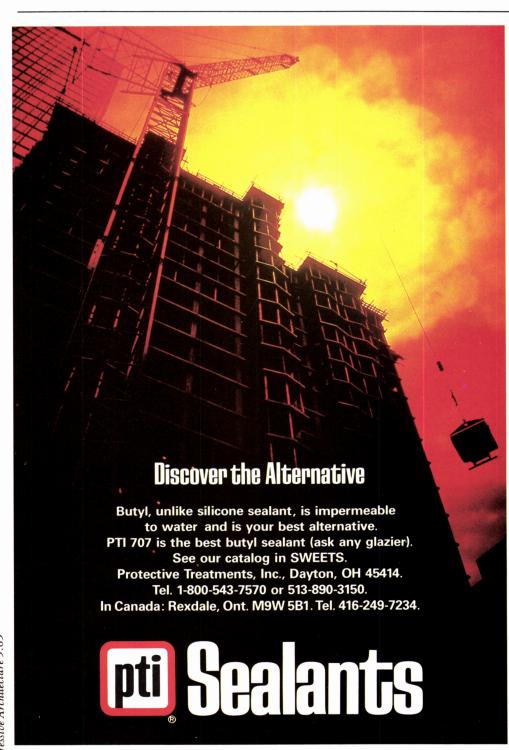
And the remodeled ground floor of the National Gallery of Art has opened to the public. The \$16.7 million renovation doubles the number of works on display in the 75,000-square-foot exhibition area and brings to light many pieces hidden for years in storage.

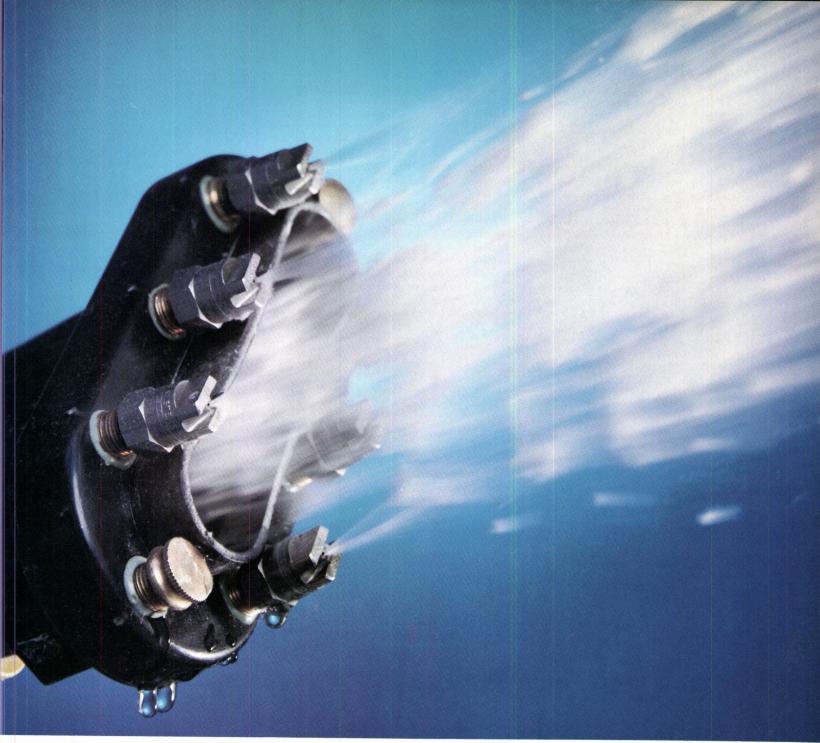
¶ The new galleries line an 850-foot eastwest axis connecting I.M. Pei's East Wing to the main building. This spine was part of Pei's original concept for the Gallery. The Washington firm Keyes, Condon & Florance handled the ground-floor renovation.

Art criticism awards

Winners of the First Annual Manufacturers Hanover Trust-Art/World Awards for Distinguished Newspaper Art Criticism have been announced.

¶ Joseph Giovannini was awarded for his reporting on architecture in the Los [Pencil points continued on page 58]





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Angeles Herald-Examiner, Franz Schulze for his articles on contemporary art, and David Elliott for his writing on art history, both in the Chicago Sun-Times.

¶ Honorable mentions were given to Christopher Knight of the Los Angeles Herald-Examiner for contemporary art, Charles Shere of the Oakland Tribune for art history, and Beth Dunlop of the Miami Herald for architecture.

¶ Two winners have subsequently switched allegiances: David Elliott is now with USA Today and Joseph Giovannini has joined the staff of The New York Times.

¶ The 1982 jury included E.A. Carmean, curator, 20th-Century Art, The National Gallery of Art; Henry Hopkins, director, The San Francisco Museum of Modern Art; Jack Kroll, senior editor, Newsweek; Bill N. Lacy, president, The Cooper Union; Donald Morrison, senior editor, Robert Motherwell, artist; and Calvin Tomkins, art critic, New Yorker.

¶ Entries for the second annual awards are due May 1, 1983, and can be submitted in one or more of the three categories with three entries maximum. Submissions should be sent to Manufacturers Hanover Trust-Art/World, 1295 Madison Ave., New York, N.Y. 10028.

Italian marble guidebook

The Italian Trade Commission is making available to architects and design professionals a comprehensive guidebook on Italian marble, granite, and travertine.

The two-volume 'Marmi Italiani' provides a technical guide to specifying marble, complete with descriptions of quarrying, processing, and finishing techniques, and a ring-bound, pictorial guide to the 146 primary varieties of Italian marble. The book is available free of charge on written request from The Italian Trade Commission, 499 Park Ave., New York, N.Y. 10022.

Olympic Gateway competition

An international competition for the design of a Gateway Arch for the 1984 Summer Olympics in Los Angeles is being held by the LA/AIA chapter.

It is open to all.

¶ First prize is \$1000, second \$500, third \$250.

¶ Deadline for submissions: July 5.

¶ Information: LA/AIA, 8687 Melrose Ave., Los Angeles, Calif. 90069.

The Cranbrook Vision

Nine scholars from around the country are participating in the organization of an exhibit on the Cranbrook Academy of Art. Entitled "Design in America, the Cranbrook Vision 1925-1950," the show is to be staged first at the Detroit Institute of Arts (Dec. 12, 1983-Feb. 19, 1984) and then at the Metropolitan Museum, with subsequent stops at Helsinki, Paris, and London.

¶ A collection of nearly 200 works from all fields of design will outline the development and influence of the Academy from its beginnings in the 1920s through the death of its founding director Eliel Saarinen.

¶ Cranbrook Academy celebrated its 50th anniversary in 1982.

Stern afloat

Robert Stern is designing the interiors of a 105-foot schooner for Ondine Yacht Charters Corporation.

¶ The hull was designed by John Alden, a naval architect, and built by Palmer/ Johnson, Inc., in Wisconsin.

Selection by commissions

The winners (and, finally, the competitors) in the highly secretive competition to design the National Gallery of Canada in Ottawa and the Museum of Man in Hull (P/A, Feb. 1983, b. 17) have been announced.

¶ Moshe Safdie Associates of Montreal will design the National Gallery, in collaboration with the Parkin Partnership of Toronto.

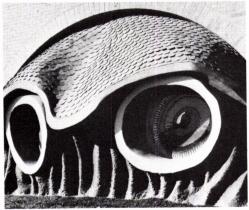
¶ And Douglas Cardinal Architects of Edmonton will design the Museum of Man, in collaboration with Tetreault Parent Langdoc & Associés of Montreal.

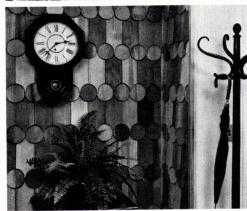
¶ On the short list presented by the Canada Museums Construction Corporation for final selection by the Canadian Cabinet were Arthur Erickson, Raymond Moriyama, Barton Myers, Ron Thom, Safdie, and Cardinal.

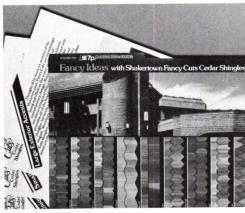
¶ An earlier cut eliminated Peter Rose, Guy Gerin-Lajoie, Dimitri Dimakopoulos and Gordon Edwards, Ron Keenberg of IKOY, and Victor Prus.

Involved in the selection process were the Department of Public Works, the National Capital Commission, the National Museums of Canada, the National Gallery and the Museum of Man directors, as well as the Canada Museums Construction Corporation.









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Calendar

Exhibits

Through Mar. 20. At Home with Architecture: Contemporary Views of the House. Mandeville Art Gallery, University of California, San Diego.

Through Mar. 21. Parcs et Jardins.

Centre de Creation Industrielle du Centre Georges Pompidou, Paris.

Through Mar. 27. Speaking a New Classicism: American Architecture Now. National Museum of American Art, Smithsonian Institution, Washington,

Through Mar. 29. Three New Skyscrapers. Museum of Modern Art, New York.

Through Mar. 31. Alliance of Women in Architecture: 1972-1982. New York Institute of Technology, Old Westbury, Long Island. Also: Apr. 8-22, Pratt Institute, Brooklyn.

Through Mar. 31. Renovating Chicago. Archicenter, 330 S. Dearborn, Chicago. Through Apr. 10. Chicago Architects Design: A Century of Architectural Drawings from the Art Institute of Chicago. Art Institute of Chicago.

Through May 22. Four Villages: Architecture in Nepal. Galleries I & II, Craft and Folk Museums, Los Angeles.

Through Apr. 4. Daily Mail Ideal Home Exhibition. Earls Court, London.

Through Apr. 15. Cervin Robinson: Architectural Photographs. Farish Gallery, School of Architecture, Rice University,

Through May 1. Designed for Theater.

Cooper-Hewitt Museum, New York. Also, Carnegie Mansion "Embellishments.

Through June 15. The Architect's Vision: From Sketch to Final Drawing. Chicago Historical Society, Chicago.

Mar. 21-June 30. Mondrian: New York Studio Compositions. Museum of Modern Art, New York.

Competitions

May 1. Postmark date, ASID/Wilsonart First Annual Design Competition in two divisions: Design concept, and Existing application. Contact 1983 Wilsonart Design Competition, % Ralph Wilson Plastics Co., 919 Third Ave., New York, N.Y. 10022 (212) 753-8686. May 15. Entry deadline, Vicrtex/ASID design competition. Contact Ann Bierbower, David H. Mann, Inc., 666 Third Ave., New York, N.Y. 10017 (212) 867-2720.

Sept. 1. Entry deadline, GE Precise Lighting Design Competition (for finished projects). Contact General Electric Co., Specialty Lamp Dept., Nela Park #3372, Cleveland, Ohio 44112.

Conferences, seminars, workshops

Apr. 1. "Lighting Design Trends." Lighting By Feder, 15 W. 38th St., Suite 1205, New York, N.Y. 10018 (212) 840-1471. Subsequent dates: Apr. 8, 15, 22, and 29.

Apr. 4–8. Second Annual International Congress on Computers/Graphics in the Building Process. Washington, D.C. Convention Center. Contact National Computer Graphics Association, 2033 M St. NW, Suite 333, Washington, D.C. 20036 (202) 775-9556.

Apr. 4–8. American Institute for Design and Drafting 23rd Annual convention, 8th Annual CAD/CAM exposition. Hynes Auditorium, Boston. Contact Margie Hecker, Assistant Chairman (918) 258-8651.

Apr. 6–10. The Society of Architectural Historians Annual Meeting, Phoenix Hilton Hotel, Phoenix, Ariz. Contact SAH, Suite 716, 1700 Walnut St., Philadelphia, Pa. 19103.

Apr. 19–20. Workspace '83. San Francisco Civic Auditorium. Contact Charley Yourd, The Charles Company, 44 Montgomery St., Suite 500, San Francisco, Calif. 94104 (415) 931-8255.

Apr. 23–26. EDRA 1983. University of Nebraska, Lincoln. Contact EDRA 1983, 205 Nebraska Center for Continuing Education, University of Nebraska, Lincoln, Nebr. 68583-0900 (402) 472-6655.

Apr. 25–27. Lighting World II, exposition and conference. New York Hilton Hotel, New York. Contact National Expositions Co., 14 W. 40 St., New York, N.Y. 10018 (212) 391-9111.

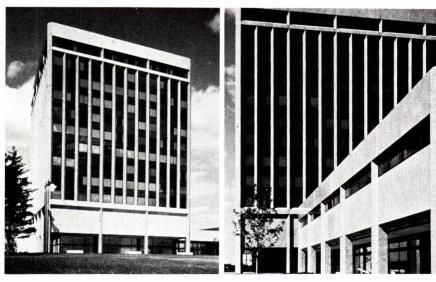
May 22–25. 1983 AIA Convention, Rivergate Convention Center, New Orleans.

June 8–10. A/E Systems '83. Market Hall, Dallas. Contact A/E Systems Report, P.O. Box 11316, Newington, Conn. 06111 (203) 666-9487.

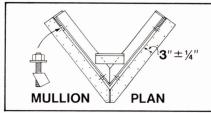
June 14–17. NEOCON 15, Merchandise Mart, Chicago.

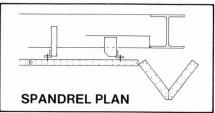
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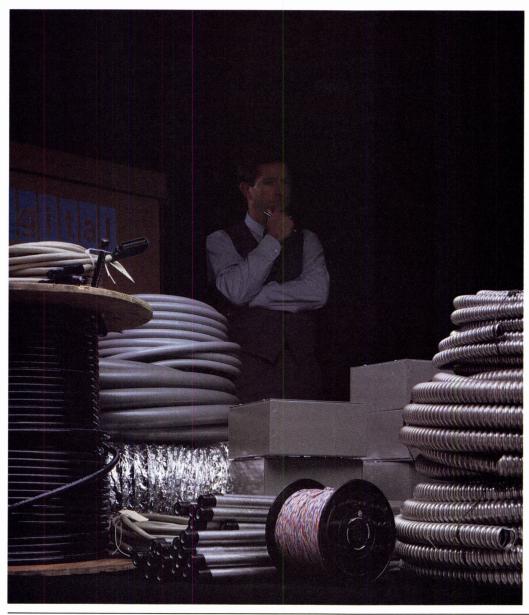
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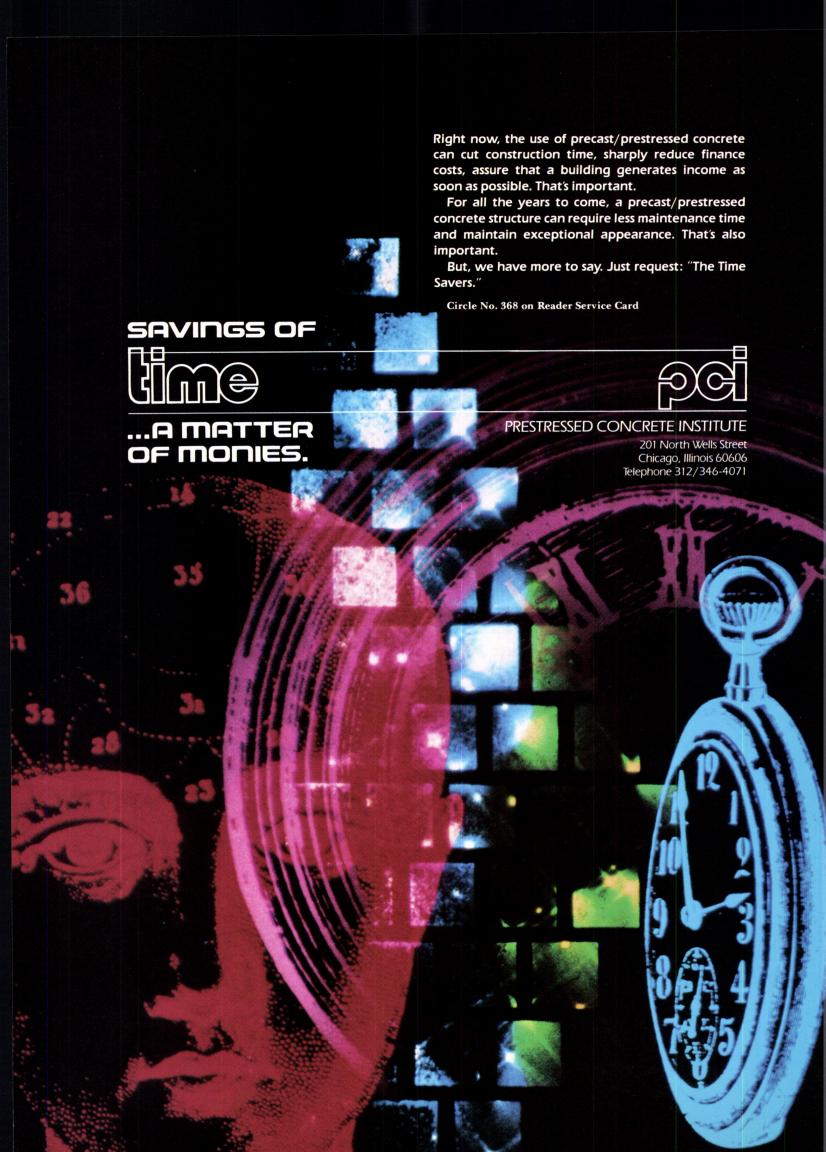
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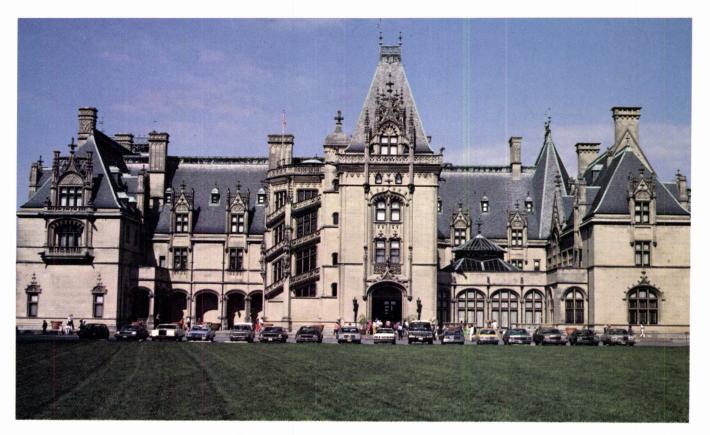
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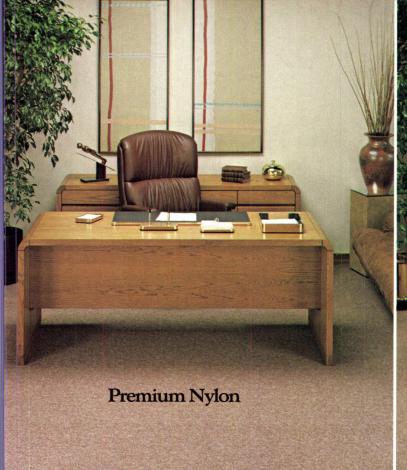
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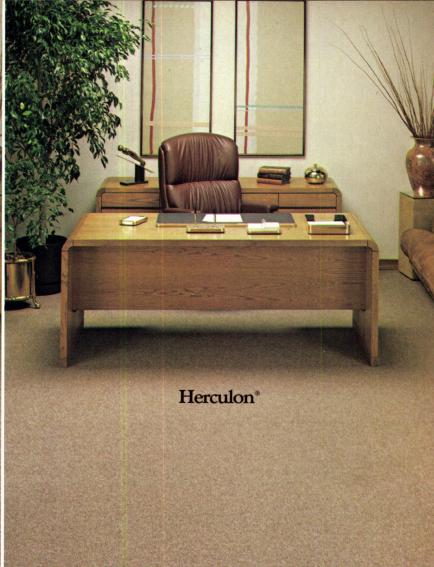
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Schedule of Events

THE INTERNATIONAL ADVANCED ILLUMINATION **EXPOSITION & CONFERENCE**

Monday, April 25

Exhibit hours: 10:00 A.M.-7:00 P.M.

Unless otherwise indicated, all sessions will be held in the Seminar room.

Session A-1, 9:30 A.M.-10:30 A.M.

'The Challenges in Lighting Design," Howard Brandston, Howard Brandston Lighting Design Inc. This session will review current problems in lighting design and include a long-range view of the future requisites and responsibilities for people in the lighting profession.

Session A-2, 11:00 A.M.-noon.

"Lighting Consultants—The Designer's Choice," Lesley Wheel, Wheel-Gersztoff Associates; and Susan A. Forbes, Forbes, Ergas Design Associates, Inc. The speakers will deal with the decision to bring in a lighting consultant; why to do so, and when. How does the architect/designer work with the lighting consultant? How does one use lighting as part of the design vocabularly?

Session A-3, 2:00 P.M.-3:00 P.M.

"Energy Management from the Owner's Point of View," Sheldon Steiner, Flack & Sheldon Steiner, Flack & Kurtz Consulting Engineers; Ralph Miriello, Exxon Corp.; and Steven Fitzmaurice, Helmsley-Spear Management Corp. This session will provide an opportunity to learn how large corporations apply energy management within their lighting installations to their best advantage.

Session A-4, 3:30 P.M.-4:30 P.M.

"What Else Should You Expect From Your Lighting Consultant?" David A. Mintz, David A. Mintz, Inc. In addition to design functions, there are many other responsibilities the consultant should assume. This session will show how lighting consultants help clients such as architects and owners in ways other than direct lighting expertise.

Session A-5, 5:00 P.M.-6:00 P.M.

"Light, Reflection and Illusion," Carl Hillman, CHA Design, Inc. Using slides and other visuals, this presentation explores the potential in the interaction of light with reflective material. The subject is covered from fundamental do's and don'ts, to analyses of successful manipulations of these elements.

8:00 р.м.

Lighting World II Official Opening Night Dinner/Disco at Studio 54, 254 W. 54th St. This evening will begin with an open bar cocktail reception followed by a buffet dinner. At 10:00 р.м. there will be a special presentation of the lighting effects at Studio 54. A disco party, including open bar, will follow the presen-

Tuesday, April 26

Exhibit hours: 10:00 A.M.-7:00 P.M.

Session B-1, 9:30 A.M.—10:30 A.M.
"Looking Backward," Paul Marantz, Jules Fisher & Paul Marantz, Inc. Mr. Marantz will discuss how, in the rush to embrace the new, the lighting professional tends to forget the valuable lessons learned in the past.

Session B-2, 11:00 A.M.-noon.

"Architectural Lighting with Techniques Borrowed from Film, Theater and Television," Sonney Sonnefeld, Sonnefeld & Co.; Imero Fiorentino, Imero Fiorentino Associates; Celeste Gainey, Gotham Light & Power Co. This internationally renowned panel will discuss how to apply the techniques, illusions, and tricks from performance lighting (film, TV, theater) to outstanding architectural lighting installations.

Noon-2:00 P.M.

TOLD (Training of Lighting Designers) Conference II Luncheon, New York Hilton Hotel. An invitational, informal lunch/work session for lighting educators.

Session B-3, 2:00 P.M.-3:00 P.M.

"Office Lighting-Options for the Future," Jeffrey A. Milham, Design Decisions, Inc. Changing technology in office lighting constantly produces new fixtures, lamps, and controls. This session evaluates these options and the interrelationship between the lighting and its environment.

Session B-4, 3:30 P.M.-4:30 P.M.

"Perception, Lighting and Sunlighting Formgivers for Architecture, William M.C. Lam, William Lam Associates, Inc. Case studies will show how the application of principles of perception in the design of lighting and sunlighting have generated architectural forms in buildings of all types.

6:00 P.M., Grand Trianon Ballroom.

The Lumen Awards Program 1983. Outstanding lighting designs will be honored at the program and dinner, sponsored by the New York Section of the Illuminating Engineering Society.

Wednesday, April 27

Exhibit hours: 10:00 A.M.-5:00 P.M.

Session C-1, 9:30 A.M.-10:30 A.M.

"Restoration and Lighting Design Today," Manny Ferris, manufacturer's representative; Steve Izenour, Venturi Rauch & Scott Brown; and John Barie, Swanke Hayden Connell Architects. This session will explore the various choices of lighting design available to architects involved in restoration proj-

Session C-2, 11:00 A.M.-noon.

"The Magic and Physics of Light," Jo Anne Lindsley, Syska & Hennessy, Inc., Joseph Upham, and K.C. Cole. The quality of light will be explored from the perspective of light as an art form for the enhancement of architectural space and as a tool for teaching simple physics.

Noon-2 P.M., Grand Trianon Ballroom. Richard Kelly Memorial Scholarship Luncheon. A cocktail reception will precede the luncheon.

Session C-3, 2:30 P.M.-5:00 P.M.

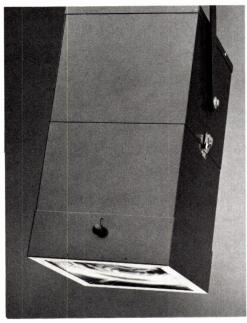
"Light Sources for the 80's," Bill Warren, Lighting Unlimited; Peter Bleasby, Thorn Lighting; John Briody, Phillips; Al Hart, General Electric; David Krailo, Sylvania; Rus Little, Osram; Heinz Stell, Westinghouse; Hall Wasdyke, Duro Test. Technical experts from several lighting manufacturers will discuss what is ahead in new and innovative lamp sources.

Exhibitors

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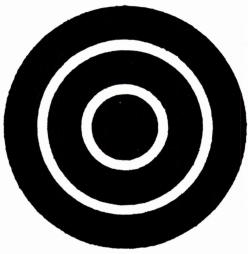
ARC Sales: Accent Light is a low wattage, high intensity spotlight with an adjustable beam. Circle 101 on reader service card



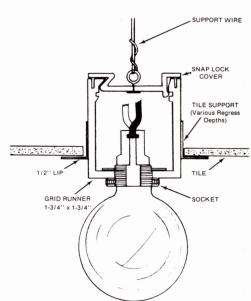
Armstrong: Tascon high-tech task oriented fixtures require only .92 watt per square foot of energy. Circle 102 on reader service card



Atelier International: The new Mantis combines compact design and a 50-watt halogen light source for contract use. Circle 103 on reader service card



Louis Baldinger & Sons: This company has created traditional, decorative, and contemporary styles since 1893. Circle 104 on reader service card

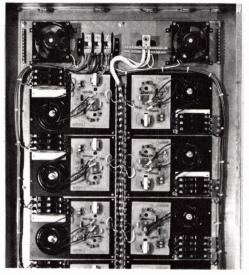


Belfer: New for Lighting World, a line drawing specification guide of low voltage, line voltage incandescent strips. Circle 105 on reader service card

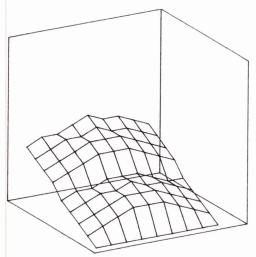


Capri: Since 1974, Capri has marketed a full line of commercial and residential fixtures.

Circle 106 on reader service card

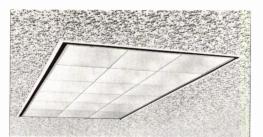


Colortran: Light Management System is a range of architectural dimmers and controls, new for Lighting World. *Circle 107 on reader service card*



Computer Sharing Services: Visualite interprets digital outputs from lighting programs.

Circle 109 on reader service card



Columbia: P3 Parabolume (pictured) and a selection of specification grade fluorescent luminaires will be shown. *Circle 108 on reader service card*

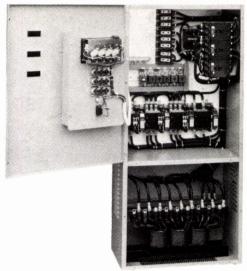


Craftlite: Hadco is a full line of decorative outdoor lighting sources from historic to contemporary projects. *Circle 111 on reader service card*



Crouse-Hinds: The RAL roadway/area luminaire is part of the product line being exhibited.

Circle 110 on reader service card

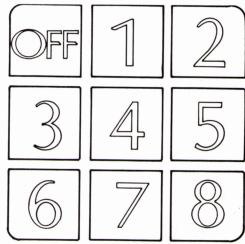


Deerfield: New for Lighting World, the SV Series lighting power controllers have a variety of commercial uses. *Circle 112 on reader service card*



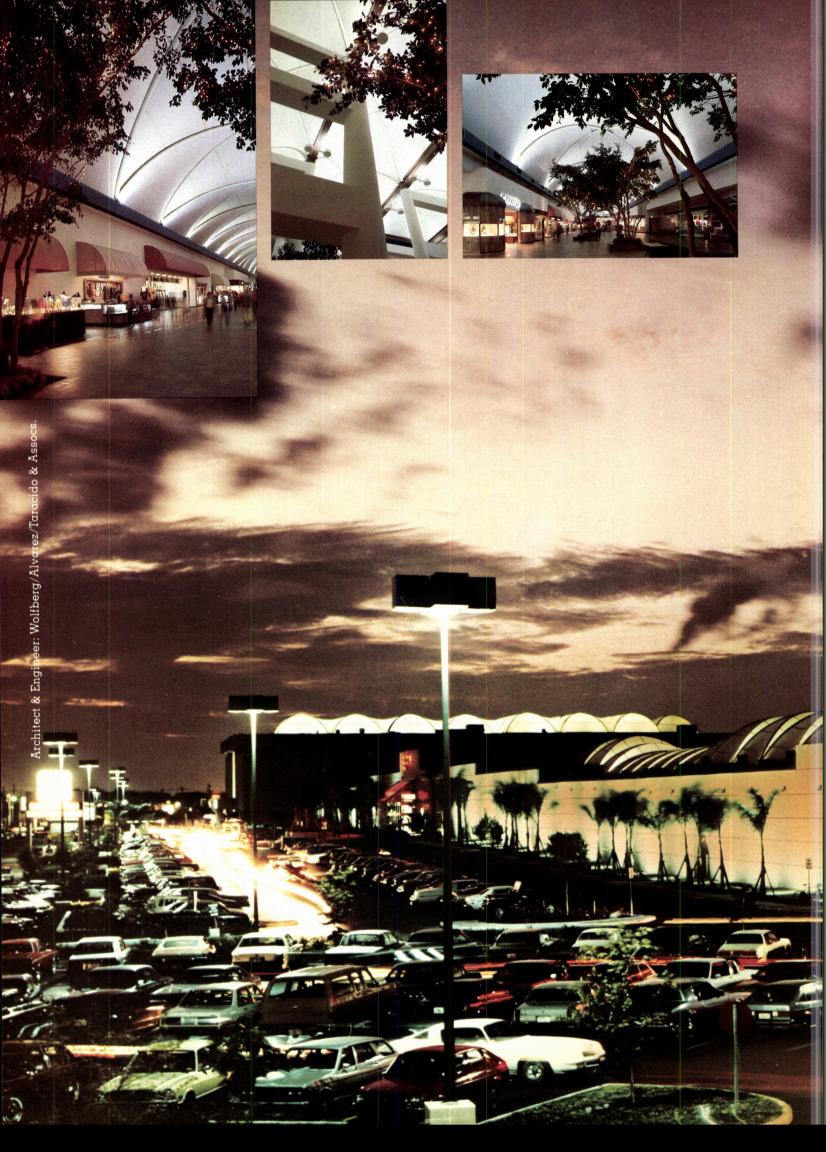
Devoe: Pictured is one of the company's more famous projects. The new Monument Bollard can be seen at Lighting World.

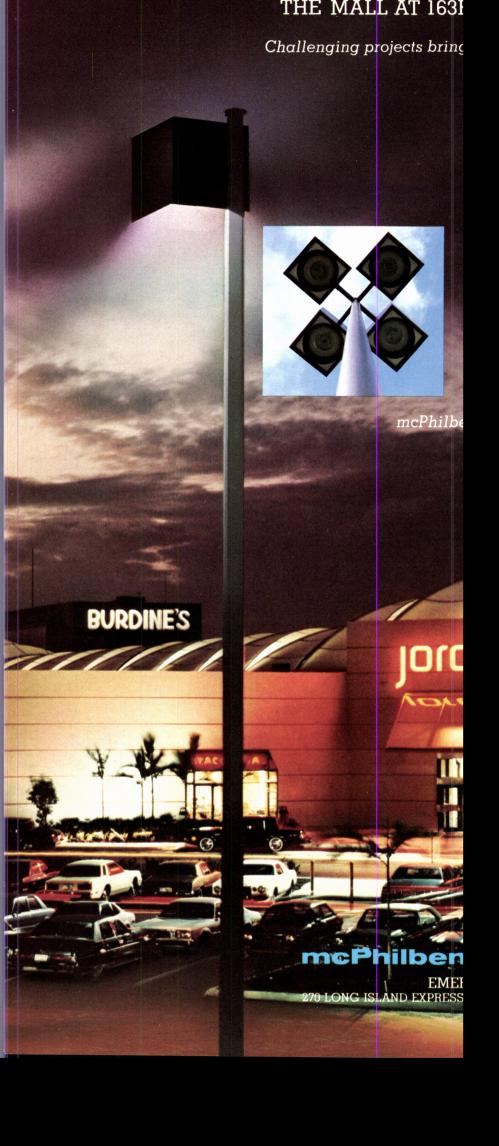
Circle 113 on reader service card



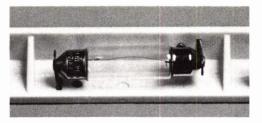
Electro Controls: LiteScene combines design power, time-fade, and flexibility into one unified system.

Circle 114 on reader service card

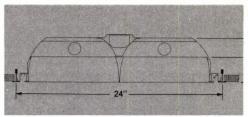




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Emm-An-El: The Lucifer Linear Light System provides a slim profile light source for high illumination. Circle 118 on reader service card



Globe: Aluminum parabolic Ultrapar luminaires provide both high efficiency and ultra-low brightness. *Circle 120 on reader service card*



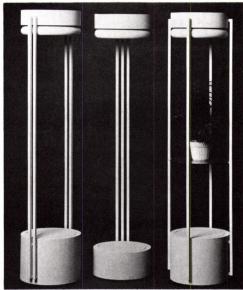
Emco: The company will display Architectural outdoor lighting for commercial, institutional, and industrial use. *Circle 115 on reader service card*



Emergilite: A group of decorator, battery-powered, exit, fluorescent, and remote fixtures will be on display. *Circle 116 on reader service card*



Exit-Us: New for Lighting World is the talking Exit sign for the visually handicapped, in a variety of languages. *Circle 117 on reader service card*

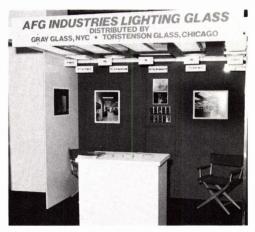


Gardco: Energy efficiency and sleek design are featured in the new Focus Ten line of office lighting.

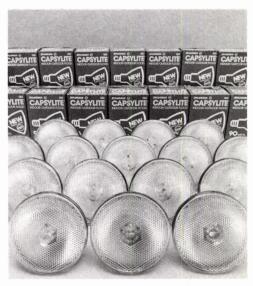
Circle 119 on reader service card



Gloco: The Par 36 recessed ceiling adapter is finished in brushed aluminum, chromium, or brass. *Circle 121 on reader service card*



Gray Glass: Featured will be high transmission glass prismatic lighting lenses in several patterns and forms. *Circle 122 on reader service card*

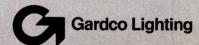


GTE Sylvania: The new line on display will be the energy-saving Capsylite spot/flood (pictured) and Octron units. *Circle 123 on reader service card*



Style High

Definitive classics that changed the patterns of outdoor lighting. Gardco's Form Ten luminaires remain high on aesthetics, low on energy, sharp on cut-off. Optical options and configuration choices give you scope and precision in tailoring luminaires to the site geometry and your architectural intent. Gardco Lighting, 2661 Alvarado Street, San Leandro, California 94577. 800/227-0758 (In California 415/357-6900).

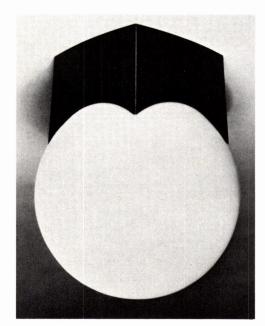


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Guardian: The Series 78 round style features an extruded aluminum bollard for outdoor use.

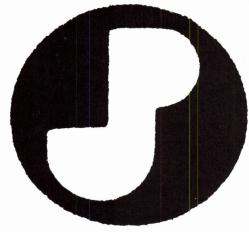
Circle 124 on reader service card



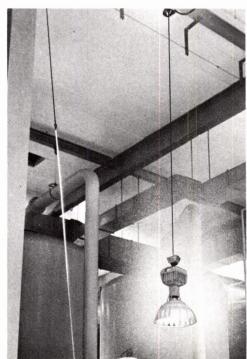
Guth: Pearl is a high-style 35/50 watt high pressure sodium fixture designed for wet ceiling or wall mounts. *Circle 125 on reader service card*



Intalite: The Aspect Ceiling/Lighting System offers movable downlighting units that fit into square ceiling cells. *Circle 126 on reader service card*

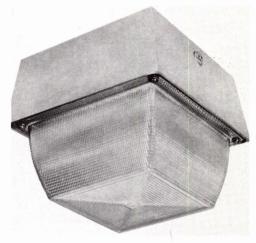


Jet-Phillips: The Icon HID floodlight for lamp sizes 70 to 400 watts in one compact housing is a new product line. *Circle 127 on reader service card*

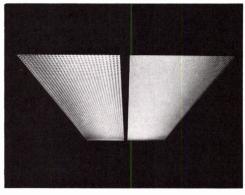


Joslyn: The Joslyn-Thompson lowering systems eliminate scaffolding, ladders, catwalks, and other special equipment. *Circle 128 on reader service card*

Keene: HID, fluorescent, incandescent, task-ambient, and patient-care luminaires will be on display. *Circle 129 on reader service card*



Kenall: The Defender is a new series of vandalproof outdoor lighting fixtures with cast aluminum housings. *Circle 130 on reader service card*



KSH: New for Lighting World is the KSH-23 acrylic lens for fluorescent lighting fixtures.

Circle 131 on reader service card



Kim Lighting: This subsidiary of Kidde will present a new line of functional outdoor lighting at Lighting World. *Circle 132 on reader service card*



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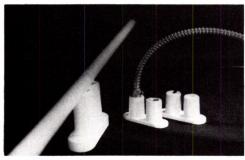
Koch + **Lowy:** The Perfecta provides a precise beam control that puts more light on the illuminated object. *Circle 133 on reader service card*



George Kovacs: The PL-13 Norelco lamp has a life of 10,000 hours; its incandescent lamp is color-enhanced. *Circle 134 on reader service card*



Lam: High performance indirect lighting systems provide glare-free lighting ideal for open offices and VDT stations. *Circle 135 on reader service card*



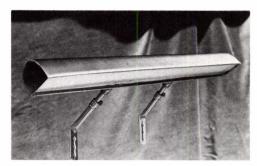
Let There Be Neon: A new system of cold cathode housings has been developed for Lighting World. *Circle 136 on reader service card*



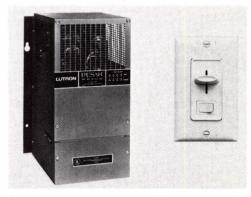
Lightolier: Low Profile is from the Architectural Fluorescent System, in two sizes, metal finish or gloss-enamel. *Circle 137 on reader service card*



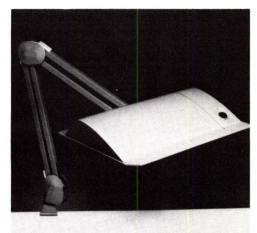
Litelab: Lite-Trax and Microlume will join the low-voltage fixtures line of architecture/entertainment lighting. *Circle 138 on reader service card*



Lumiram: New for Lighting World is a 21-inch solid brass picture light featuring a fluorescent light source. *Circle 139 on reader service card*



Lutron: The company will demonstrate energy management, custom dimming systems, and designer style controls. *Circle 140 on reader service card*



Luxo Lamp: PL-410, part of the PL-400 Series, eliminates glare, improves surface contrast, and saves energy. *Circle 141 on reader service card*

Problem

Design an energy efficient lighting system for the open office.

Solution

The Inlite® System from Sterner.

Most open office plans are fairly typical: lighting requirements vary from workstation to workstation, panel heights are of various sizes, and the entire system must be flexible to meet changing needs.

Inlite®, the indirect ambient lighting system from Sterner, can work within the constraints of an open office plan, provide quality of light, flexibility, and energy efficiency.

Here's how:

Quality of Light. Absolutely essential for office work. Inlite®



features high technology lighting sources with a system of scientifically engineered reflectors (asymmetric, symmetric, and forward-throw) to deliver controlled illumination with excellent "see-ability". The system is so versatile it frequently eliminates the need for supplementary task lights by eliminating glare, minimizing shadows, and reducing eye fatigue. Plus, color rendition can be controlled thru the selection or combining of light sources.

Inlite® can keep up with the changing office. As the office is changed, Inlite® can change along with it. Inlite® fixtures can be panel and shelf mounted or integrated into free standing kiosks. Or, for more permanent installation, mounted to walls or ceilings. Inlite® portable fixtures can be depreciated like office furniture for an even faster payback.

Energy efficient. Inlite® does more with less. In comparisons with conventional direct fluorescent lighting systems—which typically deliver 100 footcandles of illumination and consume around 2.5 watts per square foot—Inlite® delivers a more comfortable, higher quality of light at only 70 footcandles using from 1.5 to 1.7 watts per square foot. With fewer fixtures, there's less maintenance as well.



Technical and planning assistance available. Just contact Sterner. For decades, Sterner has been a pioneer in high-technology lighting outdoors. With Inlite®, they've brought that experience indoors with laser designed optical systems, computer aided application engineering, and the ability to custom fabricate enclosures for special interior design requirements. Call today, 1-800-328-7480.

Inlite® by Sterner. We make lighting look good, indoors and out.





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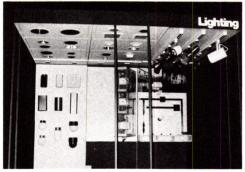


Magni-Flood: The R-line floodlight is easily installed in existing or new installations.

Circle 142 on reader service card

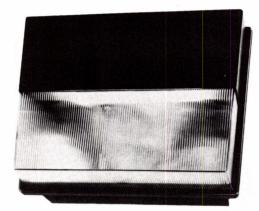


Manville: Holophane lighting has a comprehensive presentation of outdoor architectural luminaires. *Circle 143 on reader service card*



McGraw-Edison: Halo Lighting will exhibit Trac, Recessed, and Surface lighting for Lighting World.

Circle 144 on reader service card

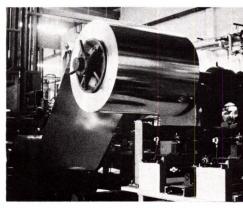


mcPhilben: The adjustable Directolite is a new cut-off luminaire for area lighting, wall or pole mounted.

Circle 145 on reader service card



Mecho Shade: On display will be exterior window shades such as those used on the Bateson Building (pictured). *Circle 146 on reader service card*



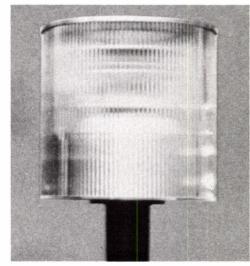
Metalloxyd, Inc.: Coil anodized aluminum for reflectors and other finishes will be on display.

Circle 452 on reader service card

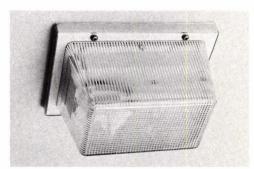


Minolta: The Illuminance Meter measures illuminance instantly and continuously.

Circle 147 on reader service card



Moldcast: On display will be several samples of new area-lighting fixtures, plus high-performance cut-off lighting. *Circle 148 on reader service card*



Moore-Lambert: The energy-efficient PL 7-watt lamp is equal to 40 watts of incandescent with the same illumination. *Circle 200 on reader service card*



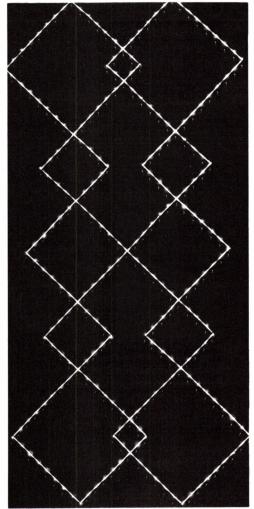


- ☐ Each lighting design should give you an opportunity to add something beautiful to any interior. That's what Atelier International Lighting is all about
- 1. The Frisbi. Suspended in space, Frisbi seems to be spun out of thin air. One lamp to create diffused, directed and reflected light.
- and reflected light.

 2. The Wall. It's an IBD award winner, for 1982. It has a floor lamp that looks like a twin and feels at home in traditional or contemporary interiors.
- 3. The Ring. Now you can ser in any direction. The top cir 360.° The bottom does a 180 the light source, not the lamp.
- the light source, not the lamp.

 4. The Quarto. Even if you turn side down, it'll still be one of or popular and inexpensive lideas. Fluorescent, or standard candescent.
- ☐ These are only a few examour unique ability to create I designs, with UL listings. The how to light up a room, ever

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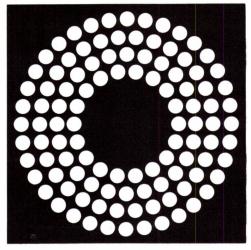


Neoray: Neolights Bare-Bud Tape features an array of 48 low-energy light buds on flexible, flat wire tape. *Circle 201 on reader service card*



Novitas: Light-O-Matic turns off lights automatically when the last person leaves the room.

Circle 202 on reader service card

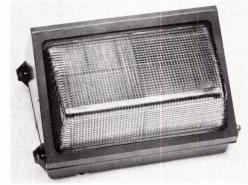


Opitex Staging: New for Lighting World will be a series of 30 specialty lighting instruments.

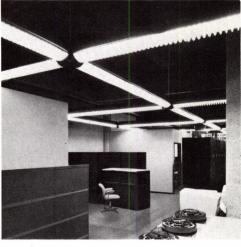
Circle 203 on reader service card



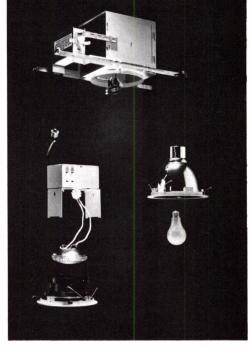
Osram: Halo Stars metal reflector, low-voltage halogen lamps provide long life, performance, and trouble-free bases. *Circle 204 on reader service card*



Paraflex: On display will be the complete line of parabolic louvers and matching components. *Circle 205 on reader service card*



Peerless: Longlites and Lite Duct fixtures utilize Softshine optical systems for controlled illumination. *Circle 206 on reader service card*



Prescolite: Lite Box features a versatile lighting system with a full spectrum of precision combinations. *Circle 207 on reader service card*



Progress Lighting: Three new low-voltage lampholders will be added to the Trak-1 line for Lighting World. *Circle 208 on reader service card*

Preserve Your Lighting Design with Preset Touch-Button Control



AURORA Lighting Scene Control Center







Precise lighting control is the ability to create exact scenes and then duplicate each scene time and again on command. With LUTRON's AURORA Lighting Scene Control Center, you can preset multiple lighting scenes at a single control center and change from one scene to the other at the touch of ϵ button.

Changing room ambiance allows more use of each room and multiplies the value of your space. AURORA's patented technology provides simple to use, high quality control or any number of lighting circuits. AURORA will control incandescent, fluorescent, low voltage, neon, cold cathode and HID lighting sources.

No manipulating many dimmers or switches to achieve correct lighting effects. Set each scene with the pilot-lighted slide controls and recall them with a touch of a corresponding button at LUTRON's AURORA. When scenes need to be updated, do this easily at the Control Center.

AURORA can increase the value and functional use of restaurants, conference rooms, churches, multi-purpose rooms and private residences.

To receive our color brochure of the versatile AURORA Lighting Scene Control Center, call or write to LUTRON, Coopersburg PA 18036, U.S.A. (215) 282-3800. TWX 510-651-3755 LUTRON CPBG TELEX 847475 LUTRON CPBG

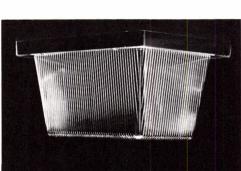
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Retina: Architel Systems provide lighting control capability and microprocessor technology.



RLR Industries: Lighting World will for use with fluorescent tubes.



see a new line of energy-saving diffusers Circle 212 on reader service card



QL: New for Lighting World will be a variety of architectural area lighting

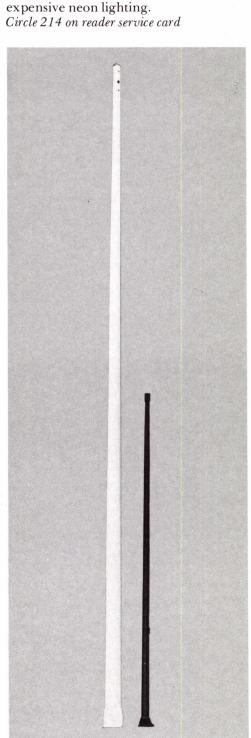
fixtures and indirect luminaires.

Circle 209 on reader service card

Rambusch: In response to the new interest in Art-Deco, Rambusch reintroduces the Art-Deco Wall Light. Circle 210 on reader service card



Roctronics: Since 1965 the company has manufactured entertainment lighting, foggers, and 3-D materials. Circle 213 on reader service card



Say It In Neon: No special installation or wiring is necessary for this line of in-

Shakespeare: These fiberglass light poles come in five colors, anchor base or direct burial. Circle 215 on reader service card

NOW YOU CAN PUT GE LUCALOX LAMPS RIGHT WHERE YOU NEVER THOUGHT YOU COULD.

Specifier Series No. 3. Low-wattage Lucalox lamps.

Until now, you've probably specified GE Lucalox® lamps for places like parking lots, walkways, manufacturing areas and gymnasiums. Anywhere a lot of light at little cost was needed.

But there have probably been applications where you would have liked to give your clients the economy of a



high pressure sodium lamp, but they didn't need that much light.

That's changed now with General Electric's 35, 50 and 70-watt Lucalox lamps. Specify them for lightposts, stairwells, lobbies and canopies. You then get the energy savings, increased light and long life of HPS lamps any place you formerly used a higher wattage incandescent or low wattage mercury vapor lamp.

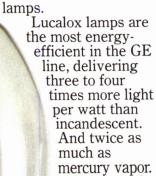
Lucalox lamps offer golden opportunities. The unique golden color of HPS lamps makes them ideal for all sorts of architectural outdoor and indoor lighting techniques, too. They especially enchance the color of most brick

or stone facia treatments.

And since a 35-watt Lucalox lamp typically provides about the same amount of light as a 100 to 150-watt incandescent or a 75-watt mercury vapor, you don't need a large budget to attain the aesthetic effects you want.

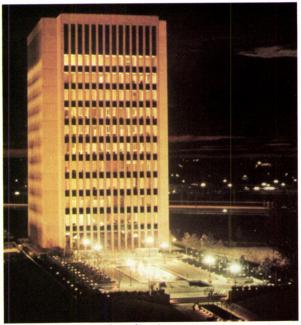
The latest addition to the Lucalox family.

These low wattage lamps join the evergrowing and improving Lucalox family. Which includes more than 20 lamps in wattages ranging from 35 to 1,000 with mogul bases available on 50 to 1,000-watt lamps, and medium bases available in 35 to 150-watt



Because of this, you can specify a much lower wattage Lucalox system to get nearly the same amount of light. Which means much lower energy usage.

And GE is constantly improving the entire Lucalox line. An external amalgam reservoir in high wattage lamps and ceramic seals are



Photos depict typical application areas.

just two GE innovations. They provide longer lamp life and a more consistent light output throughout life.

Lucalox lamps, with initial lumen output ranging from 2,150

PERFORMANCE MATRIX					
AVAILABLE LOW-WATTAGE LUCALOX LAMPS	LUMENS INITIAL MAINTAINED		RATED LIFE		
LU 35/MED LU 35/D/MED	2,250 2,150	2,025 1,935	16,000 16,000		
LU 50 LU 50/MED	4,000	3,600	24,000+		
LU 50/D LU 50/D/MED	3,800	3,420	24,000+		
LU 70 LU 70/MED	5,800	5,220	24,000+		
LU 70/D LU 70/D/MED	5,400	4,860	24,000+		

to 140,000, are available in both clear or diffuse finishes.

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GENERAL ELECTRIC

C-219

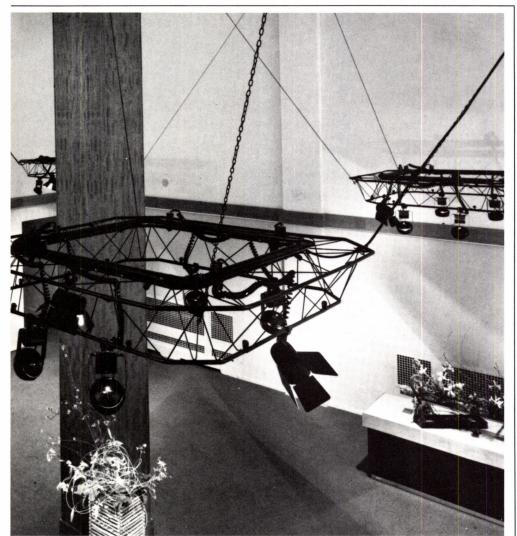
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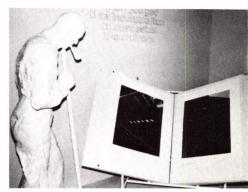


Slater/Lighting: A new series of shallow profile ceiling-mounted fixtures will join the Indirect Ambient line. Circle 216 on reader service card



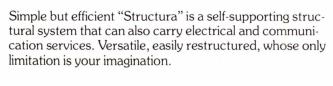
Spero: The Profile Four cutoff luminaire delivers light to outdoor areas while remaining shielded from view. Circle 451 on reader service card





Sterner: A self-service "art gallery" will be presented at Lighting World, with application photos of the full line. Circle 217 on reader service card

Dimmer Cabinet (Interior View)





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Slider Control Station

Programmable Master Station

Strand Century: Environ 2 is an architectural dimming system for simple installations or custom lighting. Circle 218 on reader service card

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Specifier Series No. 3. Low-wattage Lucalox lamps.

Until now, you've probably specified GE Lucalox® lamps for places like parking lots, walkways, manufacturing areas and gymnasiums. Anywhere a lot of light at little cost was needed.

But there have probably been applications where you would have liked to give your clients the economy of a

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That's changed now with General Electric's 35, 50 and 70-watt Lucalox lamps. Specify them for lightposts, stairwells, lobbies and canopies. You then get the energy savings, increased light and long life of HPS lamps any place you formerly used a higher wattage incandescent or low wattage mercury vapor lamp.

Lucalox lamps offer golden opportunities.

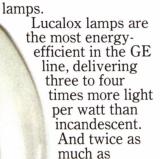
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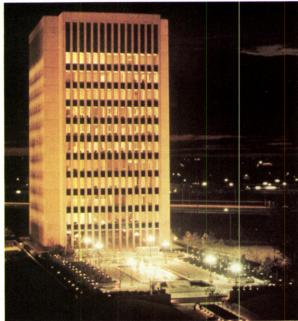
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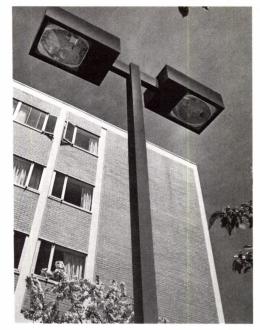
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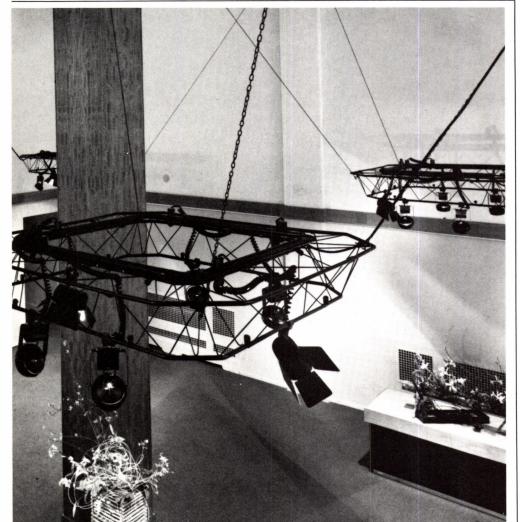
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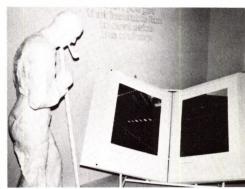
Slater/Lighting: A new series of shallow profile ceiling-mounted fixtures will join the Indirect Ambient line. *Circle 216 on reader service card*



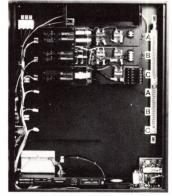
Spero: The Profile Four cutoff luminaire delivers light to outdoor areas while remaining shielded from view. *Circle 451 on reader service card*



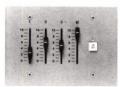
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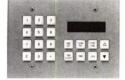
Sterner: A self-service "art gallery" will be presented at Lighting World, with application photos of the full line. *Circle 217 on reader service card*



Dimmer Cabinet (Interior View)

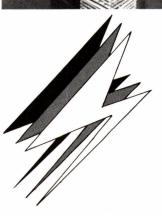


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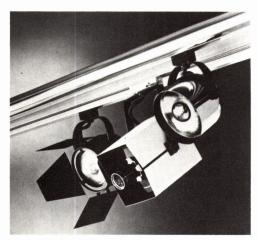
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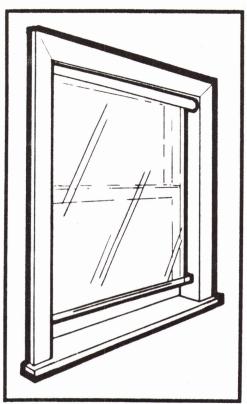


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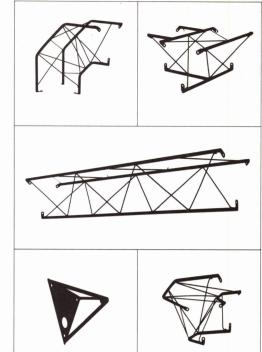


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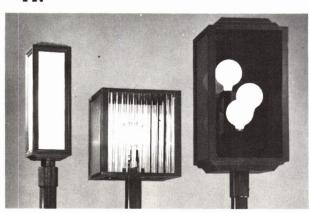
Thunder & Light: Structura can carry lighting and other electrical services without intermediate supports. *Circle 221 on reader service card*

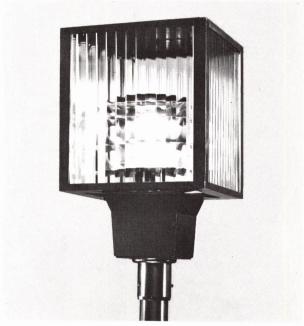
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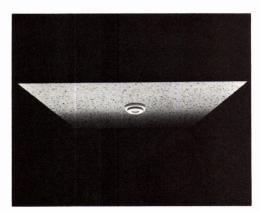
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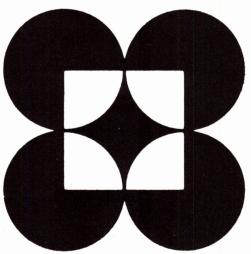
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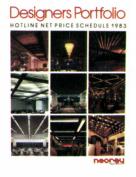




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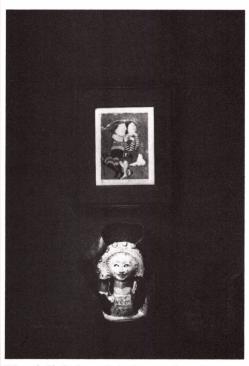




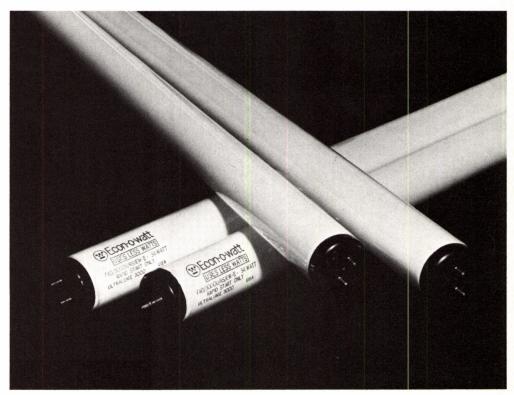
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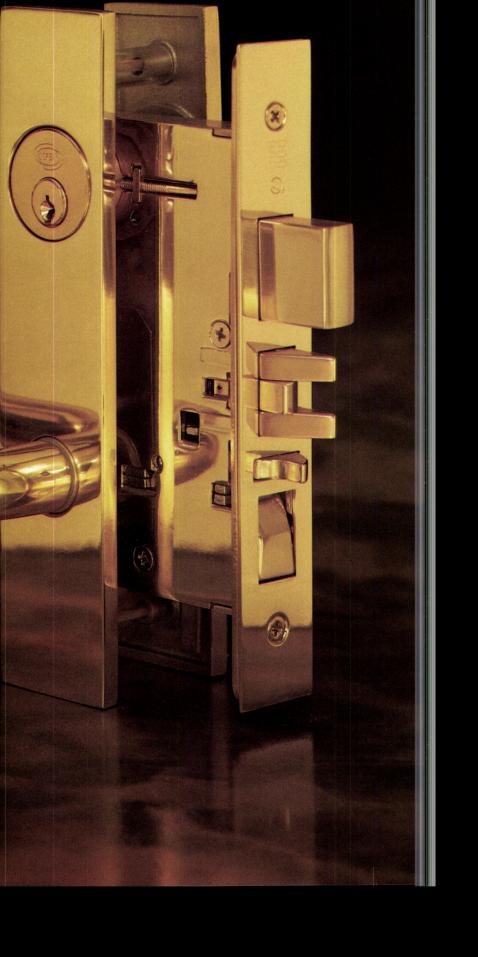
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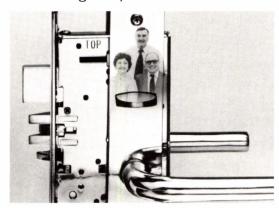
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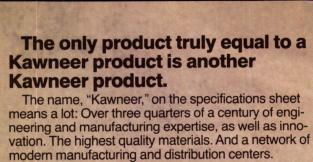
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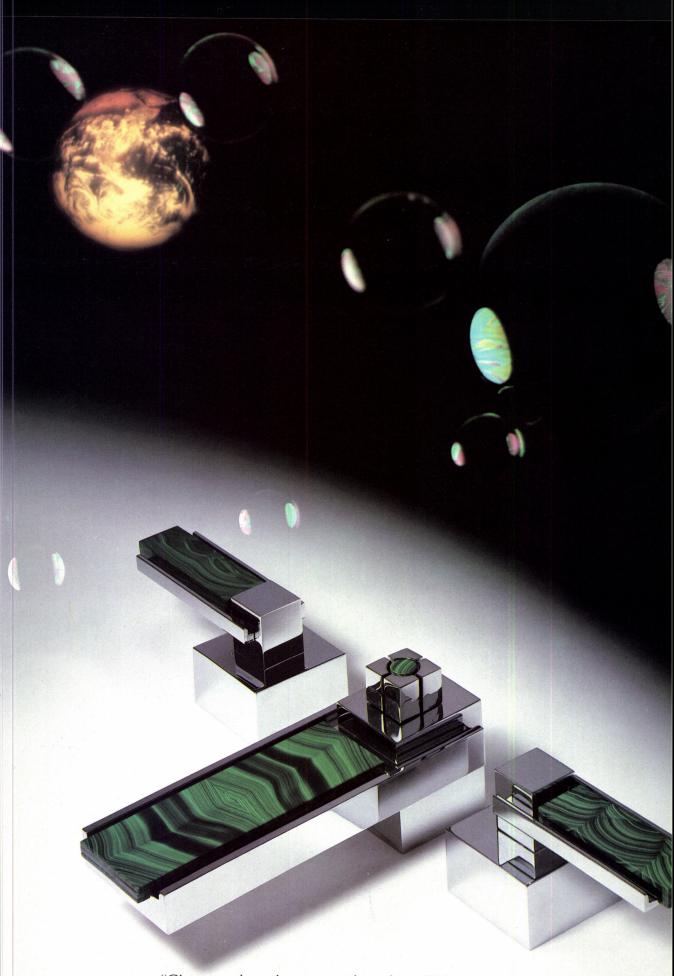
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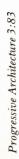


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Mind your mentors

Three projects by young California architects reflect their common background and outlook.

Sun-Tech Townhomes, Santa Monica, Calif., by Urban Forms.



den Alliso

The younger generation of any architectural movement usually resigns itself to building small-scale versions of its dream projects (ask any parent who owns a Post-Modern Gazebo). But over the last four years, this particular group of Southern Californian architects was able to cut its teeth on tougher stuff. The three projects presented here were all speculative ventures, and were developed, as well as designed, by architects who had only recently left graduate school. Of the architects whose work we see here—David Van-Hoy and George Elian of Projects; David Cooper, Michael Folonis, and Richard Clemenson of A Design Group; and Steve Andre of Urban Forms-all but Andre came out of the maverick, influential Southern California Institute of Architecture, or SCI-ARC, in Santa Monica. The lessons they learned there from their gurus—founder Ray Kappe, Frank Gehry, and Eric Moss, to name a few of the most influential forces-were quickly put to use in the condominium boom that gripped Santa Monica in the late 1970s. Having gained practical experience working for their mentors, these young architects, lured by the prospects of high profits and total design control, became their own developers. They produced a number of relatively expensive condominium projects, two

of which—A Design Group's 831 Pacific Street and Urban Forms' Sun-Tech Townhomes—we see here, along with Projects' Springwood Drive house. Over the last two years, soaring interest rates and a condominium freeze in Santa Monica have ended the boom. But while no one got rich quick, the buildings are there.

That much of the work is obviously derivative is to be expected; youth's homage to its mentors rarely makes profound statements. The functionalist approach of SCI-ARC, the constructivist tendencies of Gehry, and the supergraphic, pop-culture commentary of Moss are all there, but wrapped in much glossier packages, without the provocative, abrasive force that is a hallmark of the L.A. School. These young architects have mastered all the words, but the passion (or anger) isn't there. What is there, however, is a group of buildings that incorporate a surprising amount of good design and finesse into programs with less-than-lavish budgets, an enviable achievement for an architect of any age. [Pilar Viladas]



opringwood Drive

Barbara Goldstein

A speculative house meets the programmatic criteria of suburbia while donning New Wave garb.

Architects David Lee VanHoy and George Patrick Elian have combined pastel colors, steelframed windows, pipe railing, and interlocking volumes in a house that departs sharply from the conservative appearance of its neighbors.



I am a VAL, I know, but I live in like a really good part of Encino so it's Okay.*

When pop musician Frank Zappa coined the term "Valley Girl," he identified a phenomenon common to Southern California. The Valley Girl is a teenager whose overriding interests are clothes, having fun, thinking and talking like her peers. Hailing from the San Fernando Valley or other suburban enclaves. she is perfectly groomed, from the top of her head to her pedicured toenails, steadfastly conformist but colorful enough to stand out from her elders.

So it is with the Springwood Drive residence by Projects. It is a highly accomplished, fashionable design that conforms to all the normal expectations of what a spec-built house in Orange County, California, should be. Clad in the most up-to-date architectural fashions and meeting all the requirements of a large, single-family house, it departs sharply from the conservative appearance of its neighbors.

The house is a very competent first effort by David Lee VanHoy and George Patrick Elian, two young architects now based in Santa Monica. Having graduated from SCI-ARC in 1977, they served their apprenticeships with Ray Kappe, Eric Moss, and fellow graduates-VanHoy with Urban Forms, and Elian with A Design Group. VanHoy and Elian later joined forces to launch their own practice by building this speculative house. With no real client in mind, they evaluated the market, found a convenient site, and arrived at a solution that seemed perfectly suited to the well-to-do home buyer in Orange County.

VanHoy and Elian learned their lessons well. From Kappe and their condominiumbuilding experiences they absorbed the importance of practical space planning. From Moss they absorbed a vocabulary of New Wave graphic architecture. In many ways, the resulting house is more polished than its antecedents, yet, perhaps because of its imaginary client, it somehow lacks a real focus.

The dominant elements of New Wave graphic design are skewed grids, pastel colors, and undefined space. Drawn from constructivism, it is a vocabulary developed by designers such as April Greiman (P/A cover, Sept. 1981), and architects such as Frank Gehry (P/A, March 1980, pp. 69-85) and Eric Moss (P/A, March 1982, pp. 98-99). New Wave architecture is particularly suited to Southern California, where buildings are often best seen at a distance and at changing perspectives, from moving automobiles. Its colors, evocative of the flamboyant 1950s, vibrate in the bright, intense sunlight.

Another source of Springwood's architectural vocabulary is the recent wave of condominium building in Santa Monica. Taking their inspiration from Le Corbusier and James Stirling-architecture-school heroes of the 1970s—the designers of these buildings revel in steel-framed windows, pipe rails, and interlocking volumes. They have translated the accouterments of a so-called functionalist architecture into the elements of a style. Whereas the condominiums conform to a highly structured townhouse pattern, the Springwood Drive house demonstrates a loose, flowing attitude toward space.

The architects have used this New Wave vocabulary to tremendous advantage. Perceiving the need for public and private spaces, as well as for segregation of parents' and children's wings, they split the house into two major volumes, skewed at 15 degrees. This skewing is clear as a graphic element in both the plan and the front elevation of the

* "Valley Girl," by Frank Zappa, © 1982 Munchkin Music.

Barbara Goldstein is a Los Angeles correspondent for P/Aand editor of Arts + Architec831 Pacific Street condominium, Santa Monica, Calif.

831 Pacific Street

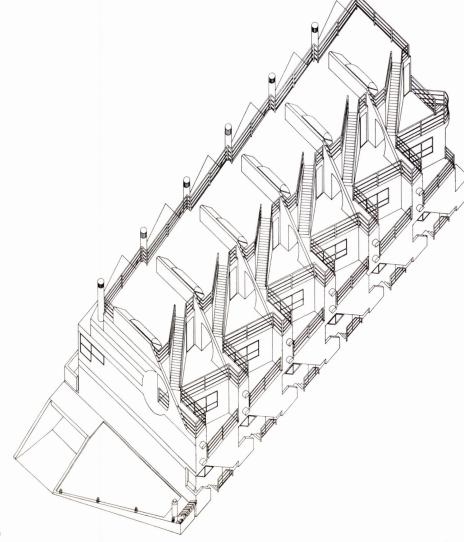
Six condominium units on a narrow sliver of prime Santa Monica real estate offer both visual variety and privacy.

Seen from the courtyard of the apartment house next door, the building's east side (facing page, top) is a composition of flat and angled planes, solids and voids, and pipe rail. The west side (facing page, lower left) is much quieter, while the Pacific Street façade (lower right) sports bright yellow supergraphics.

A few years ago, architect David Cooper of A Design Group decided, after having designed several projects for developers, that he was tired of the design compromises that were so often made in the name of economy. So Cooper became a developer himself. At the time (1980), the Santa Monica condo boom was in full swing; there was a great demand for high-priced, good quality housing. After securing the necessary backing, Cooper bought a narrow (53' x 135') lot eight blocks from the beach. On that lot, Cooper, "to make the numbers work," had to fit six 1500square-foot units and a subterranean parking garage (with two spaces per unit-remember, this is Southern California), and he had to do it for \$55 per square foot. As partner in charge of design (the design team included Michael Folonis, Richard Clemenson, and George Elian), Cooper wanted more than the standard two-story developer "box" that had proliferated around the city. The site, wedged tightly between two modest apartment houses and facing a street of small, undistinguished private houses, certainly cried out for a little creative massing.

The unit entrances are lined up along the east side of the building (each entrance has its own stairs down to the garage), facing the adjacent apartment building across a small courtyard that is divided by a common property line. The second-floor windows on this side are angled for maximum privacy and a view out to the street rather than into the neighbors' windows (on the west side, a wall insures ground-level privacy). The building's stepped profile results from the architects' solution to the problem of maximizing square footage (under the two-story height restriction) without creating a tight-to-the-lot-line, boxy form. "We were a bit more clever in interpreting zoning and building codes," remarked Cooper. Local building codes allow a "mezzanine," or loft, above the first or second floor, provided that it does not take up more than a third of the total area of the floor below it. While this loft does effectively create another room, it also altered the units' layouts. Instead of following standard procedure and locating the bedrooms on the second floor-which would have meant that one of the bedrooms would have been open to the loft—they were moved down to the first floor, and the living, dining, and kitchen areas were brought up to the second, where they occupy one unbroken space. In addition to maintaining privacy for the bedrooms, this arrangement allows the loft to look out over the living room's western exposure, and effectively doubles the living room's height. On the exterior, the lofts, since they are smaller masses, create setbacks that become sundecks; each mezzanine opens onto a deck and fire stairs to the roof. On the west side of the building, clerestory windows afford views from the lofts and light for the living areas, and create a rhythmic variation on the relatively flat west façade.

The interior spaces, while not lavishly proportioned (except for the living room), are comfortable and well-appointed, with a high degree of finish—the least one would expect when shelling out \$175,000 for 1500 square feet of apartment, although not often the case. The problem of outdoor space for each unit was addressed by a system of open decks: the second-floor "private" balconies, accessible only from the inside and enclosed



Progressive Architecture 3:83

Springwood Drive

Barbara Goldstein

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rived at a solution that seemed perfectly suited to the well-to-do home buyer in Orange County.

VanHoy and Elian learned their lessons well. From Kappe and their condominium-building experiences they absorbed the importance of practical space planning. From Moss they absorbed a vocabulary of New Wave graphic architecture. In many ways, the resulting house is more polished than its antecedents, yet, perhaps because of its imaginary client, it somehow lacks a real focus.

The dominant elements of New Wave graphic design are skewed grids, pastel colors, and undefined space. Drawn from constructivism, it is a vocabulary developed by designers such as April Greiman (P/A cover, Sept. 1981), and architects such as Frank Gehry (P/A, March 1980, pp. 69–85) and Eric Moss (P/A, March 1982, pp. 98–99). New Wave architecture is particularly suited to Southern California, where buildings are often best seen at a distance and at changing perspectives, from moving automobiles. Its colors, evocative of the flamboyant 1950s, vibrate in the bright, intense sunlight.

Another source of Springwood's architectural vocabulary is the recent wave of condominium building in Santa Monica. Taking their inspiration from Le Corbusier and James Stirling—architecture-school heroes of the 1970s—the designers of these buildings revel in steel-framed windows, pipe rails, and interlocking volumes. They have translated the accouterments of a so-called functionalist architecture into the elements of a style. Whereas the condominiums conform to a highly structured townhouse pattern, the Springwood Drive house demonstrates a loose, flowing attitude toward space.

The architects have used this New Wave vocabulary to tremendous advantage. Perceiving the need for public and private spaces, as well as for segregation of parents' and children's wings, they split the house into two major volumes, skewed at 15 degrees. This skewing is clear as a graphic element in both the plan and the front elevation of the

* "Valley Girl," by Frank Zappa, © 1982 Munchkin Music.

Barbara Goldstein is a Los Angeles correspondent for P/A and editor of Arts + Architecture. house. The major volumes are linked by a large, translucent circulation space, and their separateness is emphasized by different pastel hues.

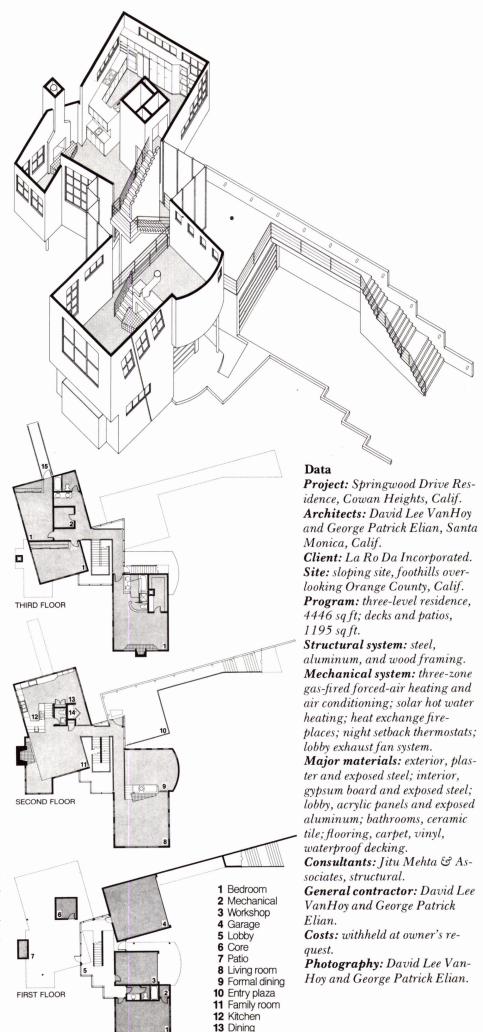
The central circulation space is a dramatic volume clad in a translucent acrylic material originally intended for use in greenhouses. Inexpensive and attractive, it reflects changing light conditions and has a high insulation value, allowing the space to function as a passive solar collector; vents on the roof allow it to function as a summertime thermal chimney as well. In fact, energy considerations were addressed throughout; individual thermostats allow zoned temperature control, and the roof is heavily insulated.

The house takes full advantage of its site. Situated near the top of a hill in a dense residential area, it successfully screens views of its more mundane neighbors while affording generous glimpses of sky and admitting plenty of sunlight. Flowing levels create a sense of spaciousness that would be impossible in a more conventional plan. Furthermore, the small footprint of the kitchen and children's wing gives the house a generous backyard—for which the architects suggest a small putting green or swimming pool.

Details are skillfully handled within the limits of the established vocabulary. The central staircase is poised precariously on a single vertical wall, allowing views up and down; industrial pipe rails and stepped planes draw the eye through the vertiginous space. As first-time contractors, the architects attained a level of finish surprising in a spec-built house, with well-crafted cabinetry and tasteful materials.

The house follows some of the most fashionable design dicta of the day. It employs Modernist principles of expressing function in formal organization. The protruding dining area, for example, is expressed as a discrete element that curves in a jutting bay over the garage on the street façade. The chimney in the living room is emphasized by being pulled up through the building at a 15degree angle. The service core is painted a uniform yellow, and is clearly visible from head to toe. Other popular-design elements are the angled, Eric Moss-type windows and scored stucco façade, the symmetrical Michael Graves face of the end wall, and a Frank Gehry forced-perspective entry stair.

While many architects tend to blame the flaws in their designs on the demands of their clients, this project's problems seem to spring from the fact that there was no client. The house may be replete with amenities ranging from double lavatories to walk-in closets, but



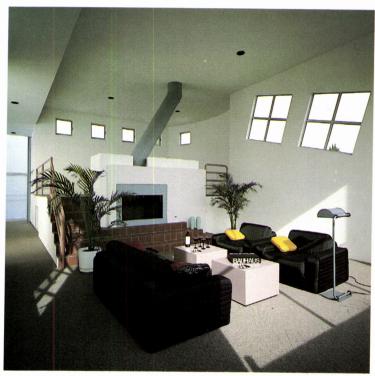
14 Laundry15 Bridge











like the exploding imagery of New Wave graphics, it wanders off in every direction, like the sprawl of Southern California, the house has no real center; instead, its most dynamic space, as with freeways, is the central court. Although there are two major living areas, there is no place in the house where one really feels at rest. While the architects claim this flexibility as an advantage, arguing that the house suits a number of different lifestyles, in reality its fragmentation is a bit disquieting.

This problem is most obvious in the placement of the formal dining area in the wing opposite the kitchen. While it would be possible to move the dining room to the space adjacent to the kitchen, this would destroy the idea of creating separate entertainment areas for children and adults—a basic premise of a large suburban house. However, to use the

dining room as it is designated in the plan, one must negotiate two level changes and the open circulation area to get food from kitchen to table.

VanHoy and Elian readily acknowledge their influences; they are most concerned with the creation of a graphic identity for their buildings, and the idea that architecture should be fun. Admittedly nonintellectual in their approach, they have created a house that is comfortable and sensuously satisfying without breaking new ground—a house for a Valley Girl. □

A skewedfloor plan (facing page) separates parents' from children's rooms, and informal family/ kitchen areas from formal dining and living rooms. The family room (this page, top left), with its abundance of windows, flows into the kitchen, just visible at far right. The diagonal line of windows in the living room (top and bottom right) recalls the work of Eric Moss; the shortflight of steps leads to the formal dining room. The central circulation core (bottom left), the fulcrum on which the plan rotates, is clad in translucent acrylic panels.

831 Pacific Street

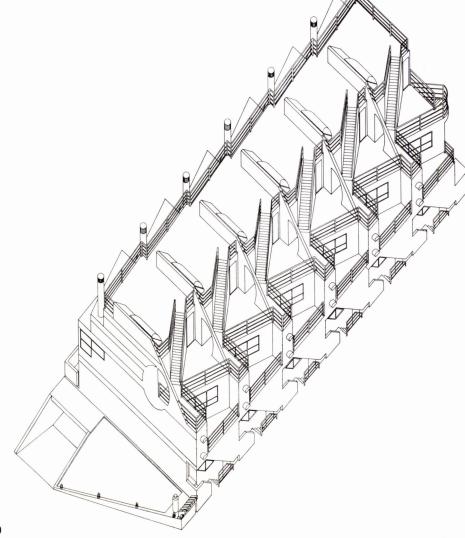
Six condominium units on a narrow sliver of prime Santa Monica real estate offer both visual variety and privacy.

Seen from the courtyard of the apartment house next door, the building's east side (facing page, top) is a composition of flat and angled planes, solids and voids, and pipe rail. The west side (facing page, lower left) is much quieter, while the Pacific Street façade (lower right) sports bright yellow supergraphics.

A few years ago, architect David Cooper of A Design Group decided, after having designed several projects for developers, that he was tired of the design compromises that were so often made in the name of economy. So Cooper became a developer himself. At the time (1980), the Santa Monica condo boom was in full swing; there was a great demand for high-priced, good quality housing. After securing the necessary backing, Cooper bought a narrow (53' x 135') lot eight blocks from the beach. On that lot, Cooper, "to make the numbers work," had to fit six 1500square-foot units and a subterranean parking garage (with two spaces per unit—remember, this is Southern California), and he had to do it for \$55 per square foot. As partner in charge of design (the design team included Michael Folonis, Richard Clemenson, and George Elian), Cooper wanted more than the standard two-story developer "box" that had proliferated around the city. The site, wedged tightly between two modest apartment houses and facing a street of small, undistinguished private houses, certainly cried out for a little creative massing.

The unit entrances are lined up along the east side of the building (each entrance has its own stairs down to the garage), facing the adjacent apartment building across a small courtyard that is divided by a common property line. The second-floor windows on this side are angled for maximum privacy and a view out to the street rather than into the neighbors' windows (on the west side, a wall insures ground-level privacy). The building's stepped profile results from the architects' solution to the problem of maximizing square footage (under the two-story height restriction) without creating a tight-to-the-lot-line, boxy form. "We were a bit more clever in interpreting zoning and building codes," remarked Cooper. Local building codes allow a "mezzanine," or loft, above the first or second floor, provided that it does not take up more than a third of the total area of the floor below it. While this loft does effectively create another room, it also altered the units' layouts. Instead of following standard procedure and locating the bedrooms on the second floor—which would have meant that one of the bedrooms would have been open to the loft—they were moved down to the first floor, and the living, dining, and kitchen areas were brought up to the second, where they occupy one unbroken space. In addition to maintaining privacy for the bedrooms, this arrangement allows the loft to look out over the living room's western exposure, and effectively doubles the living room's height. On the exterior, the lofts, since they are smaller masses, create setbacks that become sundecks; each mezzanine opens onto a deck and fire stairs to the roof. On the west side of the building, clerestory windows afford views from the lofts and light for the living areas, and create a rhythmic variation on the relatively flat west façade.

The interior spaces, while not lavishly proportioned (except for the living room), are comfortable and well-appointed, with a high degree of finish—the least one would expect when shelling out \$175,000 for 1500 square feet of apartment, although not often the case. The problem of outdoor space for each unit was addressed by a system of open decks: the second-floor "private" balconies, accessible only from the inside and enclosed

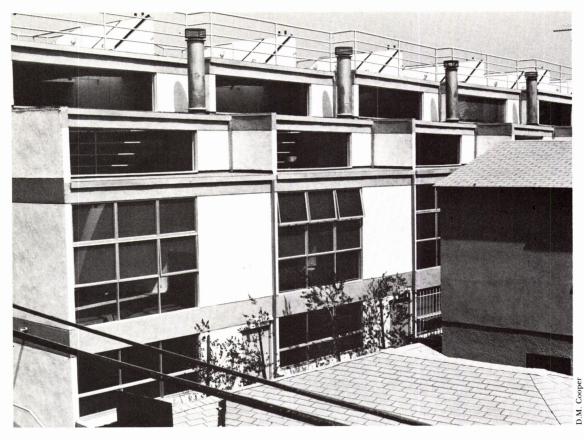


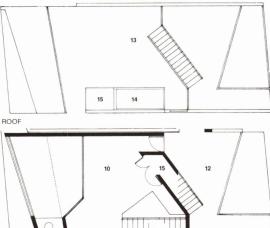






Progressive Architecture 3:83







SECOND FLOOR



10 Mezzanine

13 Roof Deck

14 Skylight

15 Storage

11 Patio

12 Deck

FIRST FLOOR

- 1 Entry
- 2 Laundry area
- 3 Bedroom
- 4 Bath 5 Master suite
- 6 Living area
- 7 Dining area
- 8 Kitchen 9 Fireplace



on three sides; the mezzanine-level "semiprivate" decks that lead to the fire stairs and are separated by open "fins"; and finally, the "public" roof deck, a completely open area for parties and sunbathing. The relative openness of the two top levels encourages a sense of community among the residents, according to Cooper.

The exterior effect of all this volumetric manipulation is the building's stepped profile, which allows breathing space between it and its neighbors. Cooper calls the building "almost a protest. We wanted to make an overstatement, something that would make people stop and think." It does that, but not because of any real overstatement. In its setting of tiny, generally unremarkable dwellings, 831 Pacific Street is a standout, with its bright yellow trim and zigzagged railings striking a jazzy counterpoint to its white stucco skin. But it also seems perfectly at ease in its proximity to the ocean; in another, fancier neighborhood, the building would probably not raise too many eyebrows. In its neat, compact package, the project manages to solve problems of space, privacy, and massing with considerable competence and imagination. That it is outspoken and exuberant in comparison to its neighbors is hardly surprising—after all, it's only being modern. [Pilar Viladas]

The west façade (left) features clerestory windows at living room and mezzanine levels that flood both areas with daylight (below). The building is seen in context, next to its more modest neighbor on the other side of the courtyard (facing page).

Project: 831 Pacific Street Condominiums, Santa Monica, Calif.

Architects: A Design Group, David M. Cooper, architect in charge; Michael Folonis, Richard Clemenson, and George Elian, design team.

Site: a flat, 53' x 135' lot in a residential neighborhood.

Program: six condominium units, approximately 1500 sqft each, with a 5500-sq-ft subterranean garage and storage.

Structural system: wood frame over concrete block and concrete garage.

Mechanical systems: gas-fired forced-air units (heat only); gas hot water heater, 100 gal., with circulating pump.

Major materials: wood studs and floor joists; plywood sheathing; stucco; gypsum board; concrete block; concrete columns and deck (see Building materials, p.

Consultants: Reiss and Brown, structural.

General contractor: J.L. Maldonado.

Costs: \$525,497; \$56.50 per sq ft, based on interior living area only; excluding fees.



Sun-Tech

An 18-unit condominium expresses urbanistic thinking with a Southern Californian vocabulary.

The townhouses are densely organized along three internal streets on top of garage podiums, from which individual stairs lead to house entries.

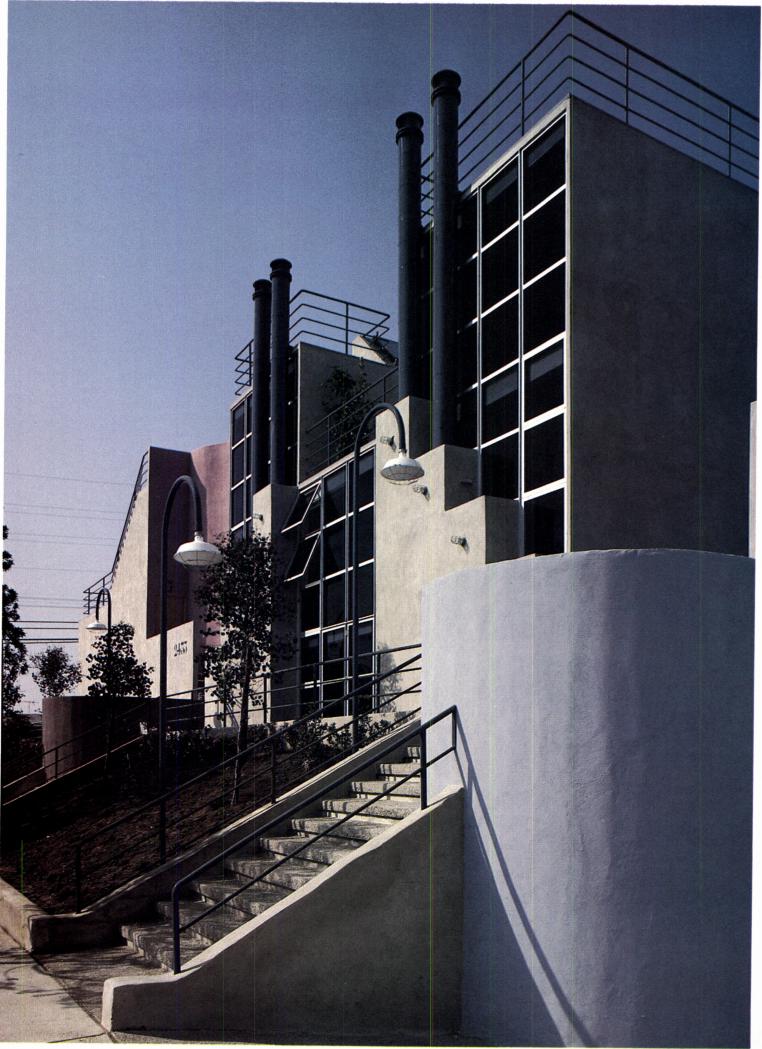


For Steve Andre of Urban Forms (which at the time included David VanHoy), the road from architect to condominium developer was similar to David Cooper's (p. 110), but on a larger scale. Andre developed (in partnership with the original owner) a package of three lots, totaling 150' x 160', in another high-density, undistinguished residential neighborhood of Santa Monica, with the same height restrictions that applied to the Pacific Street project. Eighteen condominium units (the maximum allowable), built above a subterranean parking garage, had to be orchestrated into a relatively harmonious response to problems of context, privacy, variety, and energy.

In organizing the Sun-Tech Townhomes into a coherent group, the architects recalled the example of European town planning. One long block of six units stands perpendicular to three shorter blocks of four units each; at the end of each of the three internal "streets" between the blocks is a stair to the street and one to the garage. The fact that some residents have a rather long walk from home to car does not bother Andre; he argues that "people get to know each other better when they have to walk past each other's doors all the time." This sense of community also promotes better security: In a small town where everyone knows everyone, a stranger is naturally conspicuous.

The expression of public and private sides of the project reflects the current local architectural climate: While the urbanistic layout has European models, the formal vocabularly descends from the brand of functionalism that Southern California made famous. Stucco stair towers march along the street of the long block like so many soldiers, while curved, projecting walls mark the entrances to units on the short blocks, and bridges connect the blocks at roof level to meet fire codes (and foster rooftop community spirit as well). In contrast to the rounded volumes and grayed pastels (developed with Tina Beebe) of the interior street façades, the public face of the project is tougher and more slick. Projecting from the gridded glass window walls that face the street, the stepped gray stucco forms of the fireplace walls suggest a solid mass that was chipped away to reveal a framework of metal and glass, punctuated by rows of blue chimneys. The entire composition brings to mind a huge set of high-tech building blocks.

There are three different types of units, varying somewhat in size (1800–2000 square feet), layout, and price (original prices ranged from \$195,000 to \$239,000). Each unit is entered at the second-floor level, which contains living, dining, and kitchen areas (again, the bedrooms are on the first floor), since Andre also took advantage of the "mezzanine" rule to create lofts overlooking the 18-foot-high



 $Entrance\ steps\ from\ the\ street\ to$ the unit blocks (right) abut rounded stair towers that link the blocks to the subterranean parking garage. Roof decks are accessible by stairs at the loft-level decks, or by bridges linking the unit blocks. Apartment interiors (below) are made more spacious by the use of lofts or mezzanines above the secondfloor living and dining areas; the lofts increase the amount of usable square footage, while creating a double-height space in the living/dining area. An interior "street" on the long block (facing page, top left) is lined with stucco stair towers, while bridges span the streets between the short blocks (facing page, top right); entrance-stair "stoops" and scored grids on wall surfaces break down the large scale of the blocks.

Data

Project: Sun-Tech Townhomes, Santa Monica, Calif.

Architect: Urban Forms, Santa Monica, Calif. Steve Andre, AIA, project architect; David VanHoy, architect; Steven Kanner, Richard Ramer.

Site: a 150' x 160' lot in a residential neighborhood.

Program: 18 condominium units, 32,400 sqft total, over a 16,100-sq-ft subterranean garage and storeroom, with private decks and patios, and rooftop solar panels.

Structural system: wood frame with stucco exterior.

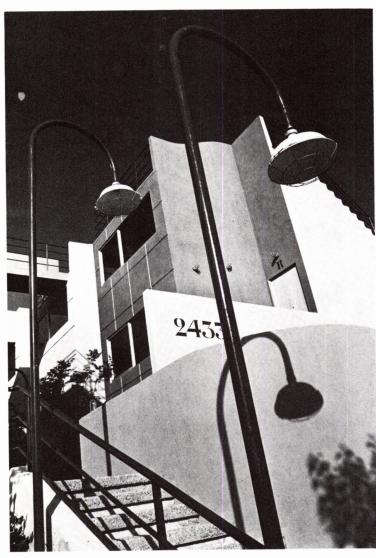
Mechanical system: forced air, rooftop heating and air conditioning; solar panels with 100 gal storage.

Major materials: wood studs, stucco, gypsum board, solar glass.

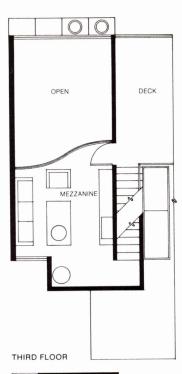
Consultants: Steve Mezy, structural; Art Patton, electrical; Emmet Wimple, landscape; Richard Felix, plumbing; Tina Beebe, color.

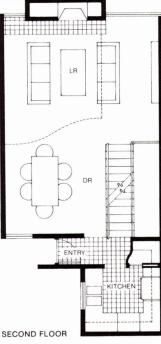
Cost: \$55 per sqft, including financing.

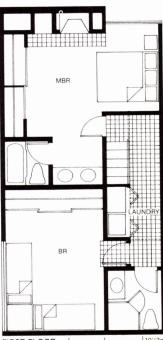
Photography: Glen Allison.

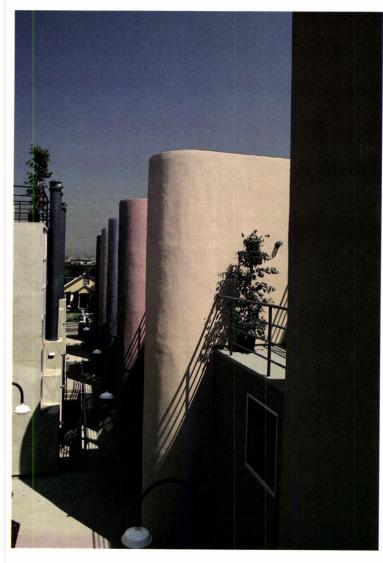












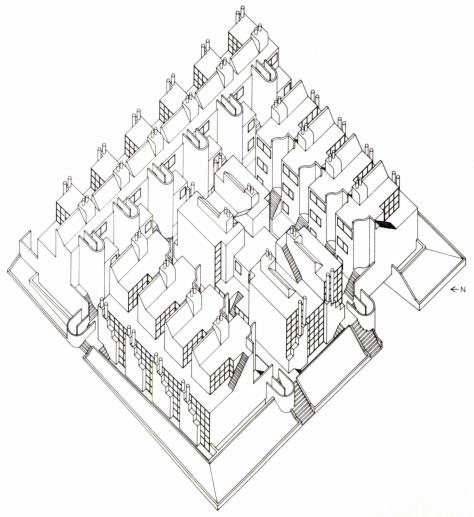


living rooms, and opening onto small decks (with stairs that lead to the private roof decks above). On the exterior of the buildings, the lofts appear as volumes carved out of the top of each unit; with the chimneys and solar collectors, they create a varied, pleasantly cluttered roofline.

Energy questions were addressed by orienting the blocks to catch afternoon ocean breezes and north and west light, as well as by the solar collectors, which are required by law. They provide only hot water to the units, but become, as Andre emphasized, "part of the roofscape," which the architects hoped would serve, along with the streets and decks, as a gathering place for residents. It is not a little ironic that the romantic and faintly disreputable image of urban European rooftops has been pressed into service to provide surrogate backyards for expensive apartments in the middle of Santa Monica's low-rise sprawl.

The project, however, is ultimately ingratiating. Its massing and organization are intelligent, its use of materials and colors sensitive, and the quality of its workmanship consistently high. Like the Pacific Street project, Sun-Tech is no shrinking violet; it displays the self-assurance that comes from being au courant. Whether this particular mode of architectural expression will ever seem as quaint as that of its older neighbors is a question that won't be answerable until the next wave of new kids shows up on the block.

[Pilar Viladas]



Interior design: Martineau Walker offices, Montreal

The spirit and the letter

A law office expansion is enriched by a system of historical references both general and specific.

Painted wood "rustication" and a massive walnut doorway (facing page, top) frame the entrance to the large conference room. Inside, a table designed by the architect seats 20; chairs were designed by interiors consultant Hervé Sauvagnac. The plan of the room—an oval inscribed in a rectangle—borrows space from the building's mechanical core (see plan, overleaf), and creates corners that "enlarge" the space (right).



Last month, we considered the game of architectural allusion played in the abstract style (Banque Worms, P/A, Feb. 1983). Now, however, we confront an example of the literal style, in the offices of Martineau Walker, a venerable, 80-member Montreal law firm. Precisely because it is a venerable law firm, Martineau Walker was used to oak paneling, neutral colors, and quiet good taste; indeed, that is what pervades its offices on the 33rd and 34th floors of the Stock Exchange Building. But when the 35th floor was appropriated for expansion, and Montreal architect Peter Rose was commissioned to design it, the more genteel forms of corporate classicism found themselves competing with a rather robust sort of revivalism. Architect Rose (with Erich Marosi) developed a system of general and specific architectural vocabularies to address the ceremonial functions of the floor's major "public" spaces (while the decoration of individual offices on the perimeter was left to their occupants).

Whether you enter the offices from the 35th-floor elevator lobby or from the 34th floor via the connecting stair, the initial message is one of 19th-Century English Classicism à la Lutyens. Dark-stained oak wainscoting, heavy cornices (no mean feat with 8'-4" ceilings), elegantly muscular pilasters, and marble floors convey an appropriately sober, yet worldly, welcome.

Step out of this comfortingly dim space, however, and the language changes. A broad, brightly lit corridor speaks of a far more generalized Classicism, with its chair rails, sloped soffits, and delicate pastel-on-white color scheme. The long sweep of wall is broken by a curve of "rustication" and a massive, pilastered walnut doorway that frames the entrance to the largest of the five conference rooms. Again, a specific ceremonial function elicits a specific language: while the plan (an oval inscribed in a rectangle) and coved ceiling are somewhat Baroque, the articulation of walls, proportions, color scheme, and decorative vocabulary rely heavily on Mackintosh. The white, ivory, and rose-pink room surrounds a 12' x 20' oval table, designed by the architects; it seats 20, and is itself quite a piece of architecture.

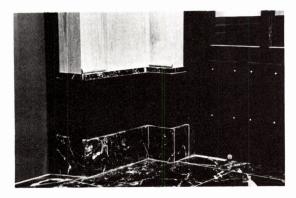
This conference room is connected to two smaller versions, each of which is marked on the corridor by a somewhat less ornate doorway, in a hierarchical distribution of ornamental richness. The large conference room and partners' lounge (directly opposite) receive the most lavish treatment, and the individual perimeter offices receive simplest-plain walnut doors and frames. This hierarchy is consistently upheld in the treatment of baseboards and moldings as well, in an attempt to "spread the luxury materials around in a linear fashion," according to Rose. This economics of embellishment succeeds on a general level, but it is most successful in the reception and conference rooms—where the architects pulled out all the stops. While the specific historical quotations of each room seem only tenuously related to each other, the disparity doesn't really matter: each room is elegant, powerful, and well built. The corridor leaves you wishing for a little more drama after you've been wowed by the sight of the opposed doorways of the conference room and lounge. Rose wanted an architectural solution to the problem of secretarial workstations, and the client should have agreed; the freestanding ele-

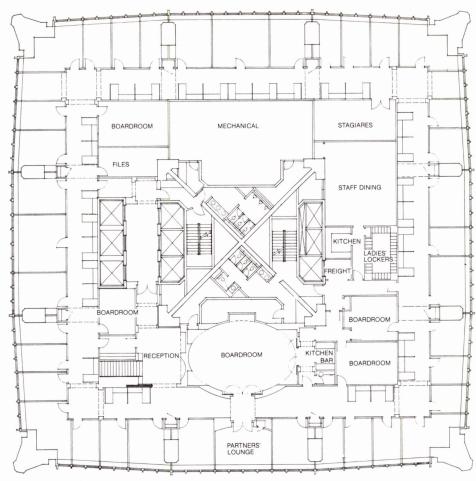


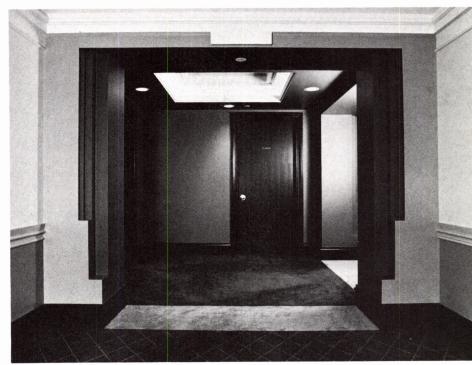
Martineau Walker offices











ments that line the corridors look temporary and misplaced. Finally, however, the best parts of the project are the ones you remember, and their grace and sophistication suggest that a close reading of historical sources often beats skimming. [Pilar Viladas]





The 35th floor elevator lobby and reception area (facing page, upper left), as well as the massive oak stair that connects it to the 34th floor (facing page, lower left, and this page) recall the 19th-Century English Classicism of Lutyens; muscular pilasters, heavy cornices, and deep green marble floors evoke a sense of substance and tradition. Details such as the architect-designed reception desk (this page, top) and the woodwork of the stair were executed with an appropriately high level of craftsmanship. The plan of the office floor illustrates the layout of the conference rooms around the large mechanical core, with individual lawyers' offices distributed along the perimeter (the room marked "stagiares" houses interns). At the corners of the corridors (below plan), walls are cut and faceted.

Data

Project: Martineau Walker Inc. offices, Montreal.

Architect: Peter Rose Architect, Montreal, with Erich Marosi; Mark Pimlott, Tom Bish, Hugh Morgan, assistants.

Building architects: Pier Luigi Nervi with Luigi Moretti. Program: 19,000 sq ft of office space on the 35th floor of the Stock Exchange Building, for a law firm already occupying space on the 33rd and 34th floors. In-

cluded are an elevator lobby, reception area, five conference rooms, and partners' lounge on the 35th floor; with expansion of the 34th floor reception area and a staircase linking the two floors.

Major materials: gypsum board; walnut doors and frames; walnut and oak wainscoting, wall panels, cornices, and furniture; marble floors and baseboards (see Building materials, p. 178).

Consultants: Kieth Associates, mechanical/electrical; Shector Barbacki Shemie and Associates, structural; Sauvagnac and Associates Ltd., interior design.

General contractor: $P \mathcal{C}R$ Desjardins Construction Inc. Cost: not available.

Photography: Norman McGrath, except as noted.

Residence renovation, Coral Gables, Fla. Two townhouses, Coconut Grove, Fla.

By Biscayne Bay

A residential renovation and two speculative townhouses by Spillis Candela & Partners look clearly to the Rationalist mode. But it is moderated through the use of soft colors, reveals, and layered planes in the renovation, and by opening rooms and hallways to private, dense pockets of vegetation in the townhouses. Although the firm is well known for its larger works, these projects show the architects also know their way around the smaller scale.



George residence

The client for this house in Coral Gables is a renowned plastic surgeon, but one whose practice is concerned with the more serious aspects of the art than the popular view of it as corrective cosmetics. It makes sense, then, that Dr. Phillip T. George would prefer to renovate a house than build a new one, and that he would, the architects report, charge them with "a complete metamorphosis of form, proportion and finish, reflecting the client's interpretation of the building." Al-

though the architects acknowledge that their role was more demanding than it would have been for a new house, this renovation should not, as some have surmised, be seen as so extensive as to be considered new. It is definitely not that; rather, it works with and adds to, in completely altering what was preexisting.

It is hard to imagine that when the Georges bought the house it was a fairly awful, kitschy type of building replete with excesses of stone veneer, shingle mansard roofs, and stained plexiglass windows (you know the type). The architects' main structural changes to the building included reworking the entry and

In the renovation of the George house, the entry façade was completely transformed through the use of a series of transitional screens, new lateral entry stairs, and wall extensions that obscure pitched roofs. The only decoration is the subtle reveal.



Residence renovation, Coral Gables, Fla.









NORTH ELEVATION

foyer and adding to the north end of the house, which entailed reorganization and enlargement of the dining room, kitchen, and maid's room, adding a new hobby room downstairs, and gaining a library and additional bedroom upstairs. On the exterior, the façades were reorganized as massive walls pierced by small windows that allow light but minimize heat gain, except on the eastern exposure where double-height glass panels were used to take full advantage of the ocean views. On this side, however, the deep overhang of the second-floor balcony was designed to minimize sun infiltration.

The exterior walls were sprayed with smooth stucco, painted mauve, and left unadorned except for a pale blue reveal that looks to Italian palazzi as its source of inspiration. Wall heights were raised, in the form of parapets, to obscure from view the existing pitched roofs, and thus to enhance the massive, rationalistic quality of the composition.

On approaching the house, one meanders through a beautiful bosk of Australian pine before arriving at the entry gate, and then into the enclosed auto court. Beyond that, "the scale of the entrance portal," the architects report "is determined by the size of the court and the approach view to the house." In summing up their efforts, the architects say that the house, "with its atmosphere of mingled opulence, massive austerity, and repose, is an example of simplicity and slight arrogance; a humble comment about pride of place and an arrogant, restrained harmony." One might agree with all of this except for the use of "arrogance" and "arrogant."

The Georges are quite active both in their social life and in their pursuit of art. They needed a showcase for both, and that's what they got. But they also got something most showcases don't have: a subtle and elegant harmony of proportion, handsome detailing done with care and intelligence, and most artful handling of formal composition. Such attributes cannot include arrogance.

At the rear (top left), where the house faces Biscayne Bay, deep balconies protect interior spaces, such as the living room (middle left), from sun. The new front entrance (bottom left) is surfaced with artist-designed tile. The dining room (top right) is under the newly created upstairs library, while the new kitchen (bottom right) is in the expanded north wing.

Data

Project: residence for Dr. and Mrs. Phillip T. George.
Location: Coral Gables, Fla.
Architects: Spillis Candela & Partners, Coral Gables, Fla.;
Julio Grabiel, partner in charge;
Ed Lamas, project architect; Nilo Puentes, Armando Garcia, design team.

Client: Dr. Phillip T. George. Site: 2.5 acres on Biscayne Bay. Program: a complete renovation of, and addition to, an undistinguished house.

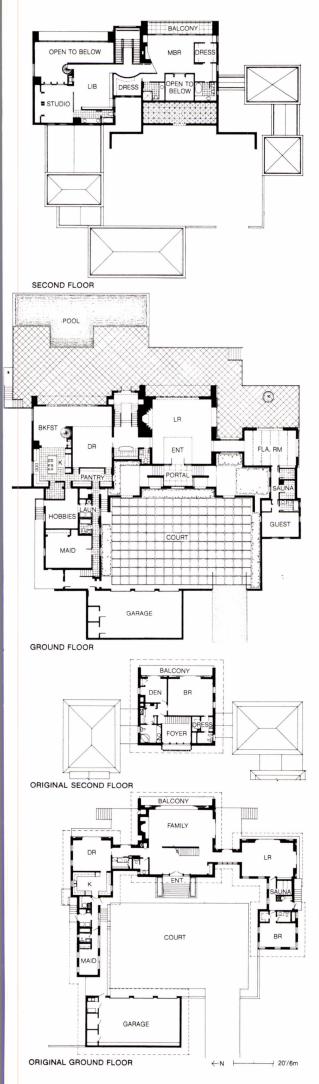
Structural system: reinforced concrete block, concrete slabs, concrete block retaining walls, roof trusses.

Mechanical system: air conditioning, split system; heat reclaim unit.

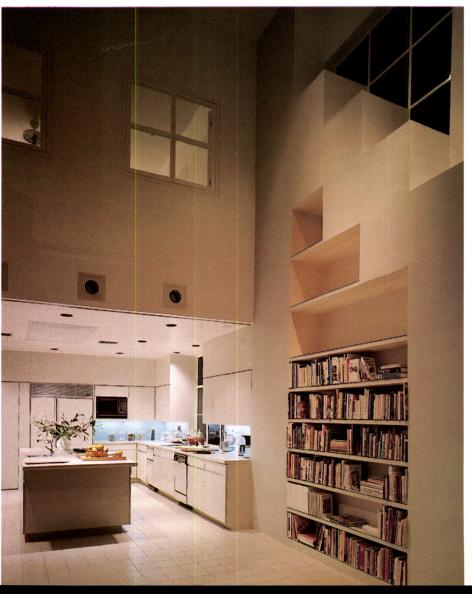
Major materials: stucco walls, white tile roofs (see Building materials, p. 178).

Consultants: Andrew Witkin, landscape; Dianne Castro, interiors; Spillis Candela & Partners, structural, mechanical. General contractor: Sam

Joseph.
Costs: withheld by client.
Photography: Steven Brooke.



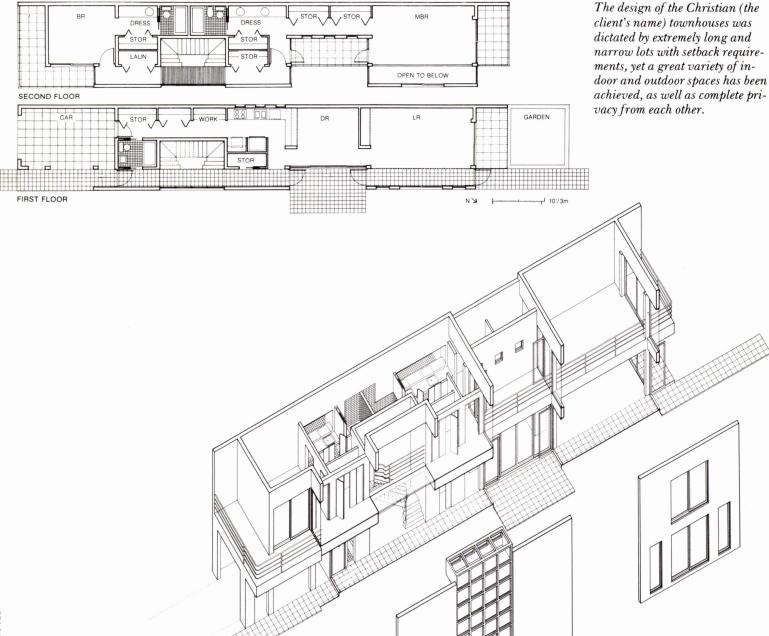




Christian townhouses

The very long and narrow configuration of the speculative townhouses in Coconut Grove was established by the lot sizes, which were exempt from the present zoning regulations that require a 60-foot width. For these lots, a 25-foot width prevailed because they had been plotted before 1946, when the regulations were changed. In addition, the old regulations stipulated side stepbacks of 5 feet and front and rear setbacks of 20 feet. This left a buildable area of 15' x 88'. It is hardly an ideal configuration, and one that few have ever had to contend with, other than those converting spaces typical to the old, deep and dark industrial loft buildings of the kind commonly found in New York's SoHo, where the cast-iron structures line the streets hard













against each other. But in the Grove, the 5-foot side setbacks, the extreme building length, and the lower height of the buildings could be, and in this case were, used to brilliant advantage.

As they exist today, the two detached single-family houses are only parts of what may become a block-long complex. But these two fragments clearly illustrate the architects' ability to build houses very close to each other, while allowing each complete privacy and a profusion of natural light and ventilation. The southwest façade of each house is a solid wall that screens it from the neighbor's garden running parallel to it, and thus allows the combined 10-foot-wide side setback space between the houses to become a "private" and visual extension of the 15-foot-wide interior. Each house is then organized along a long circulation spine parallel and next to its garden. The outer wall of the spine is enclosed by a variety of solid walls, gridded windows, and sliding glass doors, which correspond to a series of interior spaces along its way. Where stairs lead to the second floor, the spine at that level is bridged by metal grating and skylit from above to allow natural light throughout the stairwell. The 20-foot setback at the front of the house is of necessity a drive leading to the carport, while the setback at the rear of the house is used as the major outdoor garden and terrace.

Coconut Grove is one of Miami's oldest residential areas, and one with considerable and very special charm. Unfortunately, though, that quality has been seriously eroded in recent years by some insensitive new buildings, especially down by the waterfront facing Biscayne Bay. One could hope, however, that the lessons these houses teach, in building sensitively and responsibly within their context and in generally following the traditional vernacular of natural ventilation and illumination, might also be followed by others. [David Morton]

A long passageway runs through each house, but where stairs lead to the second level, the hall has been bridged by metal grating and skylit from above (top left and facing page). Back door (top middle and bottom left) leads to private garden.

Data

Project: houses for Dixon Wallace Christian, Coconut Grove, Fla.

Architects: Spillis Candela & Partners, Coral Gables, Fla.; Raul L. Rodriguez, partner in charge; Luisa Botifoll Murai, project architect; Luisa Botifoll Murai, Enrique L. Rodriguez, Carlos P. Touzet; drawings. Client: Dixon Wallace Christian.

Site: two contiguous lots, 25' x 108' each, with setback restrictions on all sides.

Program: two two-story town-houses, 2024 sqft each, constructed within each lot's 15' x 88' allowed buildable area.

Structural system: reinforced concrete block; concrete slabs—second floor and roof slabs designed as a composite system with Epicore steel deck units.

Mechanical system: air conditioning, split system; heat reclaim unit.

Major materials: sprayed stucco exterior, smooth plaster interior, metal grating and pipe rails, aluminum and glass skylight and window wall, Cuban tile (see Building materials, p. 178).

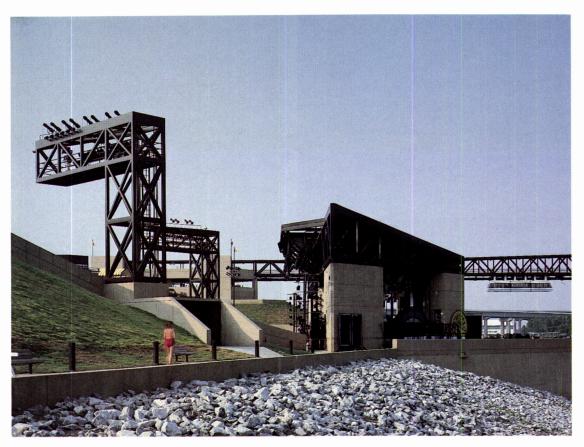
Consultants: Douglas Duany, landscape.

General contractor: Khuly and Khuly Construction.

Costs: \$136,233; \$67.30 per sq

Photography: Steven Brooke, Patricia Fisher.





mits, he *might* do some things differently, but as it was designed years ago, it retains some of the brutalist elements in its exteriors that were more common in the 1960s and 1970s. But from the city side, it is hard to see that there is much building there at all.

The museum structure is largely concealed by berming, and the amphitheater, which features views back to the city skyline, is a strong tie-in with the park bridge and the one beyond, linking Tennessee with Arkansas. Only on the river side does the somewhat stern architecture show in full-height walls.

If a visitor follows the intended route through the museum—which is easy to do and very well thought out and installed—he or she will first view a film about the river, recalling various aspects of its history, then proceed to the exhibits. In a progression, many aspects of the heritage of the river unfold, including Indian cultures and early settlers, river boats and commerce, river disasters and phenomena, the Civil War, and then the music of the river. All aspects are accompanied by audio and visual commentary or music. Full-size models of the front sections of both a steamboat and an ironclad gunboat have been constructed in meticulous detail, also complete with vivid sounds for each. A final exhibit room, with views out to the river, holds operating boat engines, an aquarium with river fish, and visuals on wildlife and the creation of the river.

But the really outstanding aspect of the park is just beyond; as visitors exit the "river room," they find themselves at the edge of an intricate concrete contour model of the river. The exit puts them at the location of

Memphis, depicted, as are all other major cities along the river between Cairo, Ill., and the Gulf, by slate block maps with stainless steel streets and bridges. Gray slate is used for normal blocks, green for parks, and bronze for institutional or government facilities. Visitors have the option of strolling upriver or down to New Orleans, along the twisting path of the river. Historic events and sites are marked with discreet symbols, which are explained fully on freestanding plaques nearby. The river is especially fascinating to children, and they can always be seen splashing along it with glee. In addition to the river model, all of the major watersheds for the Mississippi are shown on walls that detail what rivers feed what other rivers. Also shown somewhat symbolically are diversion routes engineered to ease flood dangers. The whole thing is a fascinating experience.

A picnic area and a playground form the north end of the park, and there are areas for quiet strolling and sitting, with views either toward the real river or back at the Memphis skyline. The 4300-seat amphitheater has already been the scene of several very popular concerts and events, and the marina is full of boats.

Public reaction to Mud Island has been, to put it mildly, outstanding. Harrover is the first to say that he didn't do it alone, but he has received a flood of mail from Memphians and from visitors around the U.S. congratulating him on his accomplishment. A very telling incident happened during a walk down the street with Harrover. A couple he did not know told him how much they enjoyed the park, having been there three times and having bought a season pass. He thanked them, and as they walked away, they stopped and called, "Roy?" "Yes?" "Thank you!'

Data

Project: Mud Island Park,

Memphis, Tenn.

Architect: Roy P. Harrover & Associates, Memphis, Tenn. Roy P. Harrover, concept and design; Nesbit G. Coltharp, associate, sitework and river model; Tommy Polk, phase I; Robert Roesler, phase III amphitheater; Norman E. Newman, associate, specifications; Lowell F. Howard, associate, construction administration.

Client: City of Memphis. Site: island at the confluence of the Mississippi and Wolf Rivers. **Program:** new recreational and educational park.

Structural system: concrete augered pressure grouted piling and some spread footings; concrete columns, beams, and walls; steel H piling at two bridge piers, steel frame amphitheater roof framing, steel bridge framing on concrete piers. Steel framing on restaurant and maintenance building. Wood framing and steel joists in marina building.

Mechanical system: central system HVAC with electric boilers, hot and chilled water, airhandling units and ducted system. Electric resistance heating in a few areas.

Major materials: exposed concrete interior and exterior; gypsum board, interior walls; linear metal ceilings and acoustic tile and concrete ceilings (see Building materials, p. 178).

Consultants: structural, Jack C. Scott-Pickering, Wooten, Smith & Weiss, Inc.; mechanical and electrical, Office of Griffith C. Burr, Inc.; soil and earthwork, Marvin L. Jacobs-S. Joseph Spigolon; theater lighting and sound, Robert L. Puckett-Henry D. Swanson; construction coordinator, Lockridge & Associates, Inc.; museum exhibits, Joseph A. Wetzel Associates, Inc., and Roy P. Harrover; exhibit design, Barry Howard & Associates, Inc.; riverboat and gunboat design, Roy P. Harrover and Ronnie B. Bonner; landscape design, William R. Norris; food and beverage consultant, William R. Harbour-Bill L. Murray; restaurant interior design, Steve Kling-Paul D. Gillespie; store interior design, Space Design International; marina design, TLM Associates, Inc. Cost: \$58,500,000.

Photography: Greg Hursley, except as noted.

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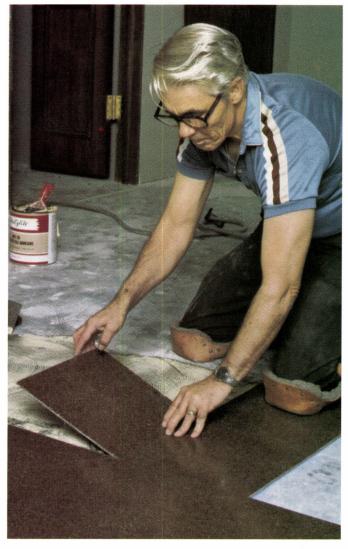
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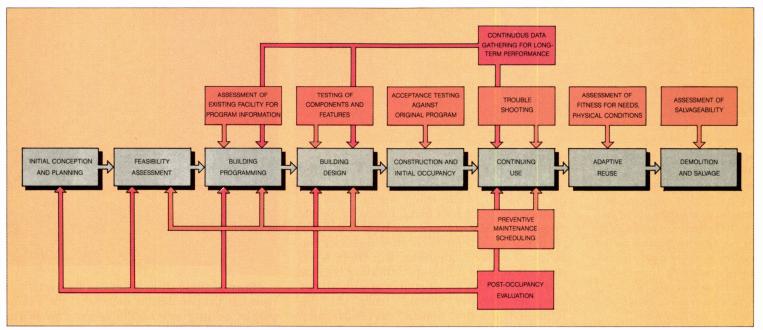
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Preventive medicine



DIAGNOSTICS THROUGH THE BUILDING LIFE CYCLE

Thomas Vonier

Mounting interest in adaptive reuse and building performance has fostered the emerging discipline of building diagnosis. Its techniques are relevant before, during, and after a project.

Thomas Vonier, a P/A correspondent, is head of the architectural firm Thomas Vonier Associates, Washington, D.C., and a principal of the Urban Development Partnership, Washington, and the Leadenhall Group, Baltimore.

To the degree that buildings have always developed problems, there have always been people concerned with healing, or at least treating the symptoms of, "sick" buildings. That treatment has come to be known as building diagnostics, encompassing new and old techniques, simple and complex approaches. The ranks of building diagnosticians are growing, and their pursuits are acquiring the earmarks of a discipline.

Enthusiasts describe diagnostics as the art and science of knowing, with considerable precision, what conditions exist in a building or building subsystem, and what is likely to transpire in the future. Borrowing from medicine, they see diagnosis, prognosis, and therapy as inextricably linked, reflecting a concern for the continuous examination of building health. Where prognosis suggests that deleterious effects may ensue, treatment—and monitoring the effects of treatment—may be prescribed.

Several factors suggest that building diagnostics, or at least more rigorous attention to the in-place performance of buildings, will increase in importance as the 1980s proceed:

- The costs of highly sensitive instruments are dropping, and computer software is improving, thus offering improved tools to people who are potentially better able to use them.
- Clients who own and operate large numbers of buildings are increasingly concerned with routine surveillance and assessment.

Operation and maintenance costs are rising dramatically as a proportion of total building-related expenses; diagnostics can lead to substantial repair and service cost reductions and can contribute to improved facility productivity.

- Older buildings will be reused increasingly, spurring demand for more reliable ways to assess existing conditions and the suitability for new uses.
- Concerns for liability and litigation related to building failure, catastrophic and otherwise, will press design professionals and their colleagues toward the application of tests and measurements that appear to be more objective than "professional judgment."

The recent concerns that have helped to spawn diagnostics have ranged from the moisture problems of large-span roofs to indoor air contamination resulting from ever-tighter building envelopes, outgassing of various materials and products, and the lingering uses of asbestos. Rising energy costs have also played a role: "House doctors" are at work in Boston and other cold areas of the industrial Northeast, often armed with an impressive array of instruments and computerized analysis programs, striving to

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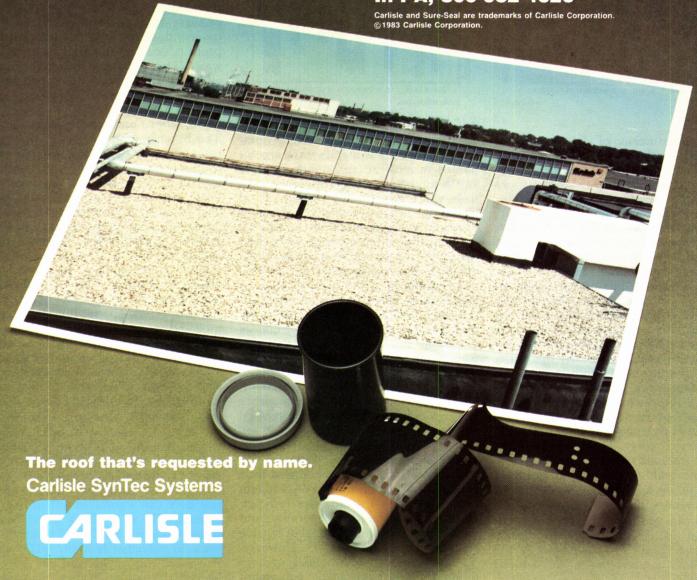
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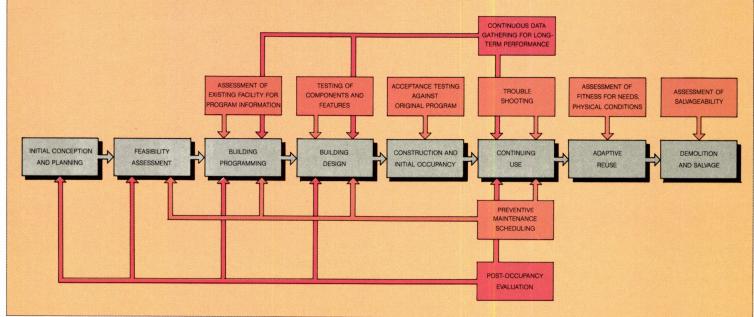
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Preventive medicine



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LIMITS OF METHODS FOR MEASURING MOISTURE RANGES

Roofing materials may look and feel dry, but in fact always have some moisture. (Above) Roofing specialists suggest that moisture in the subvisible range can be as harmful as moisture above the 45-50 percent range visible to the eye. Instrumentation includes nuclear moisture meters and infrared equipment. Gravimetric measurement entails "drying" of sample materials to gauge weight loss from removed water.

Nondestructive screening devices (above right) detect moisture in roof deck insulation. The roof is divided into a grid, and moisture readings are then marked onto a gridded roof plan. The devices are sensitive enough to take readings through gravel ballast or heavy mastic coatings.

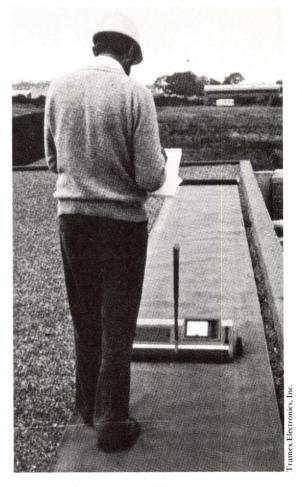
"diagnose" and "cure" a host of energydraining ailments.

Diagnostics is presently quite specialized. The phalanxes of energy experts tend not to be the same people using similar tools and methods to trace roof leaks, just as those who engage in HVAC system troubleshooting tend not to extend their investigations into envelope-related questions. But there is evidence that some of the specialization is giving way to a broader set of concerns with, to borrow yet another phrase from the (enlightened) doctors, holistic, preventive medicine, which includes the precept that one doesn't call on the diagnostician only when something is ailing. Indeed, diagnostics seems to be as much a shift in attitudes about buildings as a group of new techniques.

Preservation and conservation

Many advances in building diagnostics have come about through the interest in preserving and restoring historic buildings. At least some of the emerging techniques have been a response to the occasionally disastrous application of inappropriate treatments, administered with insufficient diagnosis and little or no regard for possible harmful side effects. Energy measures have been the villain in some cases, for they've led to the introduction of insulation and moisture barriers where none existed before.

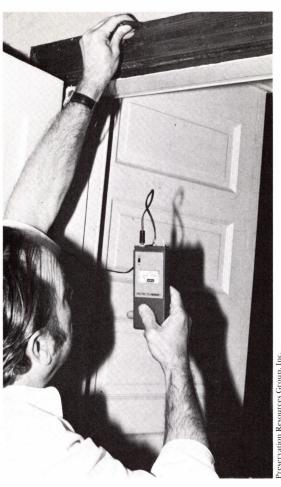
The National Park Service reports that many historic buildings, whose previously permeable envelopes had allowed for the relatively harmless migration of moisture, have had that long-established and sometimes delicate pattern upset with the installation of new elements designed to retard vapor migration or block thermal losses. The unfortunate results have ranged from peeling interior paint and seriously damaged plaster to rotted structural components and exterior cladding. In other cases documented by the Park Service, external "storm" glazing added to existing windows and doors created moisture condensation within a now impermeable glass sandwich. The results: the eventual rotting of the historic sash and frames.



Many of these difficulties can be overcome through proper design measures, for example, by adding weep holes to exterior storm glazing panels. The point is that diagnostics, in the form of testing for the presence of moisture in existing building components, has become an important aspect of planning for changes to historic buildings, as has the consideration of the long-term effects such changes may produce.

The importance of monitoring buildings, historic or otherwise, cannot be overemphasized. "Looking at things over time is crucial," says Hugh Miller, chief preservation architect for the National Park Service. He cites NPS experience with a large crack over a Palladian window on Philadelphia's Independence Hall: "We have been watching this crack for 20 years. It looks serious and visitors frequently ask whether we've noticed and what we're doing about it. But the crack opens, and then it closes; it never gets worse. It's a part of the building—a little like breathing—and may have been there since shortly after the place was built.'

The point Miller makes, and it is one echoed by many who concern themselves with diagnosing building problems, is that without examination over time one runs the risk of prescribing expensive, unwarranted, and potentially harmful interventions in what often turn out to be relatively benign situations. It is never too soon, they add, to begin taking an interest in diagnosis: the process applies to new construction as well as to the assessment of how existing facilities are performing.



Seeing where and what the eye cannot

Diagnostic techniques fall into three categories, based on their effects on building components:

• Destructive procedures use a sample of the material or subsystem being tested, with the sample itself rendered useless in the process.

• Intrusive techniques temporarily disrupt or affect the performance of the system, as in the case of pressurizing a space in order to trace air movement paths or leaks.

• Nonintrusive techniques include photography, thermography, acoustical monitoring, and a variety of observational techniques; they do not interfere at all with system operation or performance.

A complete diagnostics approach might employ each of these procedures at various points in the building life-cycle. The real lure, however, is in the last category; this is the stuff of seductive hardware.

Not all nonintrusive techniques involve "high technology." Pennsylvania structural engineer Richard I. Ortega, after describing a series of increasingly expensive and complicated techniques for monitoring the movement of building cracks, revealed his favorite approach: A pair of machined-steel rulers, available for a few dollars at Sears, are placed perpendicular to one another at a point along a building crack; movement readings in hundredths of an inch are possible along the perpendicular indices. "This is an adequate scale for most measurements," he says. "The readings are admittedly only in two dimensions, but that's the point. In many cases you really need only that amount of information to diagnose what's going on." He also stresses the need to examine movement over at least a



full cycle of seasons. Ortega has placed such simple cruciform ruler monitors in an 1885 house he's renovating, "just to keep in touch with what the work is doing to a particular wall in the place."

Another low-tech diagnostics story circulates among preservationists about St. Paul's Cathedral in London. There, it is said, a person regularly measures and records the distance between sets of small iron markers implanted at various points along the cathedral's walls, Serious problems were averted during subway construction recently when greaterthan-normal wall movement was noted. Thus alerted, the cathedral's caretakers were able to stop work until special precautions were taken. The story is used to stress the value that simple diagnostics can have in detecting problems before visible evidence develops. 'Just marking the end of a developing crack, noting the date and then going back to visit and see whether it has moved can yield valuable diagnostic information," says Ortega.

On the more elaborate end of the scale, however, real advances are being made. Any number of infrared instruments are available for spotting thermal and moisture leaks. Tracer gases and pressurization techniques can aid with diagnosing infiltration and ventilation problems. New imaging techniques are developing for space-conditioning equipment monitoring, and microprocessor-controlled management systems are taking advantage of many new environmental probes and monitors.

In another manifestation of troubleshooting the invisible, underground leak detection has become a major enterprise on U.S. Army bases. Thermal imaging and acoustical monitoring techniques have allowed technicians to trace costly steam and high-temperature-water leaks with little of the expense and in-

Technicians (above) scan a roof area with a portable infrared camera and monitor, marking out an area that appears to be dry, but in fact holds significant moisture.

Small, hand-held moisture meters (left), which give immediate readings on the moisture content of porous materials such as wood, have probes either attached to the meter or on wires for hard-to-reach locations.

A rose by any other name . . . ?

Building diagnostics is the generic term identifying a wide variety of assessments made for an equally wide variety of reasons. Combining elements of "hard" and "soft" science, the field lays claim to areas both known and unfamiliar to most architects. Among the areas encompassed are:

- Computer-assisted building code compliance checking.
- Testing of building components and procedures for conformance with specifications.
- Post-occupancy evaluation of facility performance in terms of user needs.
- Development of repair and maintenance schedules.
- Monitoring and adjustment of building systems and equipment.
- Detection and monitoring of movement in construction joints, glazing, and cladding.
- Pinpointing of steam, water, thermal, and electrical leaks.
- Measurement of human thermal comfort factors.
- Testing for ambient noise, speech privacy, and acoustical reverberation.
- Monitoring of indoor air quality.
- Testing of lighting levels and luminaire efficiency.
- Testing of soil behavior near building foundations.
- Measurement of soil acidity and possible effects on foundations and other belowgrade building components.
- Prediction of building component behavior under high stress (earthquakes, fire, heavy snows, flooding, etc.).
- Monitoring of building component responses to normal weathering.
- Assessment of physical security and resistance to vandalism, forced entry, etc.
- Examination of conditions in concealed piping, insulation, and structure.

convenience associated with visual inspection. Similar ventures are being tested for building piping system inspections, and experimenters see wide application throughout industry.

Seeing where and what the eye cannot see, or sensing what the unaided human cannot, is one of the contributions in the offing from diagnostics research.

A new bag of tricks for architects?

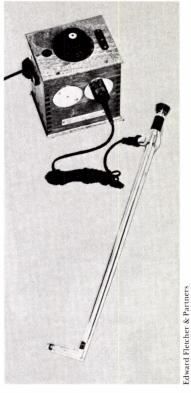
The use of small, portable precision instruments and a bit of ingenuity is enjoying increasing currency on job sites. Several architects and engineers admit to some chicanery here. "I always carry my hand-held moisture meter when there's a concrete pour or when shoring is to be removed," says an architect who does supervision, "if only to put the crews on notice that I'm being serious about what they're doing. I may not actually record the data every time I take a sampling, but the gesture alone has a desirable effect." Another reported the routine practice of scraping material samples into small plastic vials during site visits, noting that "they may just sit on a shelf, but the very fact that I've taken them creates a needed attitude among applicators."

Similar results have been noted with clients. One engineer carries a \$400 pocket-size thermal scanner wherever he travels, impressing colleagues and clients alike as he takes aim and identifies cool and warm spots on building surfaces, while holding forth on principles of thermal transfer and occupant comfort.

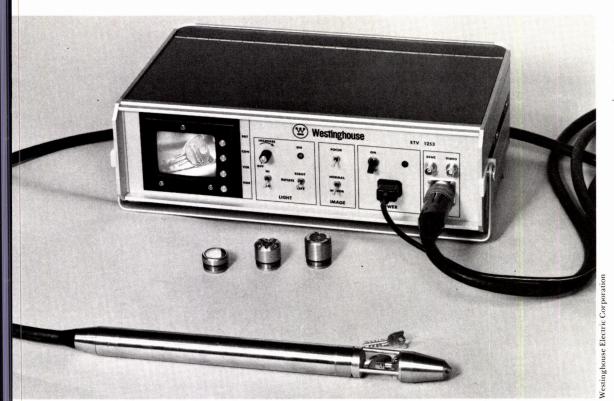
Of course the key is not the instrument or the gesture but the competence of the user. It is crucial that architects and engineers understand and correctly interpret such measurements. There is no denying, however, the inherent impressiveness of some of the devices and methods, or their potential in the realm of more substantial benefits. Hugh Miller points out that craftsmen will often take great pains in matching fine woodwork, searching for the proper grain and coloring: "They then proceed to mill and install woodwork, or even join different pieces of the same lumber, with no regard for moisture content."

It is not uncommon for moisture levels to vary widely within a single stockpile of nearly identical materials because of such factors as the length and manner of storage. These differences can lead to extreme variations in shrinkage and movement after materials have been worked and installed. Simple measurements with hand-held probes permit better control over these unwanted results.

Architects and others who want to spot insulation gaps and thermal bridges in inaccessible places with greater accuracy during construction can rely on a variety of portable infrared instruments. Similar checks can be made for the presence of moisture in roofing materials and wall finishes, where tolerances are critical to long-term performance.



Inspection of wall cavities and other hard-to-reach building spaces is aided by a tiny probe attached to a viewing lens or camera. The British-made device retails for about \$1200.



Capable of "seeing" inside small pipes and conduits where conditions are hostile (extremely hot, cold, or caustic), this miniature television camera was developed for utility plant inspections, but is being marketed for building utility surveys.

On-Site, a newsletter about developments in diagnostic technology (subscriptions are \$50 annually for six issues, from the Building Diagnostics Group, Inc., 1401 N.W. 78th Avenue, Miami, Fla. 33126), reports regularly on such episodes as the recently completed 18-story apartment building where residents complained immediately after moving in of severe cold and frozen piping in lower stories. Wall and floor samples revealed no irregularities and the heating system was performing properly; only a series of thermal scans revealed an inordinately cold slab between the third and forth levels, caused by improper placement of insulation.

Diagnostics and facility management

Diagnostics may hold the key to effective facility management and long-term building maintenance, much of which—if done at all—has been left to nonprofessionals. What little there has been in the way of professional involvement has been largely the domain of engineers. "Architects seem to regard callbacks to a building as an embarrassment," says Hugh Miller, "but it's the reality of buildings." He believes that architects, particularly, have ignored a potentially profitable opportunity, if not a professional obligation, to become more concerned with sustaining the well-being of buildings through the complete lifecycle.

One of the principal entries to this emerging area of professional service may be through what Silver Spring, Md., engineer

Don Carter calls the "oh-by-the-way" approach. His private engineering firm, which regularly employs thermographic scanners in detecting thermal and moisture leaks, is often called on to design mechanical and electrical renovations for offices and manufacturing plants: "When I speak with the owner about what he's asked us to do I may say, 'Oh, by the way, did you know that your operation and maintenance costs can be cut significantly with a little extra effort?' Believe me, an owner spending millions a year on energy or big sums on roof repairs will take interest immediately." What follows may be an additional commission to study particular problems, but increasingly interest is turning toward retainer arrangements where conditions are monitored on a regular basis.

There is no reason, Carter acknowledges, why architects shouldn't have a direct involvement in such diagnostic enterprises, particularly as their experience qualifies them well to lead a team, to examine nonmechanical aspects of building systems, and to assess the more fundamental questions surrounding building use and functional performance. Indeed, if the term "instrument" is broad enough to encompass not only hand-held hardware, but also a complete range of survey forms, computer software, and unobtrusive observation techniques, then many architects are well prepared to join the ranks of those who boast knowledge in the area of building diagnostics. Architectural programming, with its examination of user needs and occupancy patterns based on past experience, already embodies many of the concepts inherent in the diagnostic approach.

Smart buildings

One of the distinctions that should be made between people and buildings as patients is that people can tell others about what ails them; they may not succeed at self-diagnosis, but they know where it hurts. "The human as patient," says Dr. Aran Safir, professor of ophthalmology at the University of Connecticut and a lighting engineer, "can tell us about symptoms. Buildings have not been designed with these purposes in mind. If building diagnostics is to become a well-developed area, systems of information feedback will have to be improved. Reporting systems that do not now exist for buildings will have to be created."

In other words, if diagnostic technology can become a routine part of maintenance for the lastest generation of automobiles (ruefully, it should be added, at the expense of "do-it-yourself" repairs by the owner), why not for buildings? There is evidence that just such an approach is taking shape among certain developers. The Charles E. Smith Company, for example, has retained a United Technologies subsidiary, Building Systems Company, to install complex monitoring and control mechanisms throughout a new office complex in the suburbs of Virginia near Washington, D.C. The systems will audit and respond to indoor and outdoor temperatures, limit electrical demand, control elevators, and perform a host of other complex functions. Future plans, according to UT's project manager Tony Quattrochi, call for the complete integration of a "data highway" that will offer internal and external voice and data communication through fiber optic coaxial cable vertically embedded in the walls. "We're talking about being able to handle fire, security, HVAC systems, elevators, load cycling and shedding, equipment startup and sequencing, lighting, data processing, and even allowing building developers to lease complete electronic work stations to their tenants," says Quattrochi, whose firm has also handled projects at the Experimental Prototype Community of Tomorrow (EPCOT) at Walt Disney World.

He readily acknowledges that developments have yet to take into account conditions in the external envelope, for example, deterioration in weatherproofing elements, but one wonders if this can be far behind. United Technologies recently changed its subsidiary's name (it was formerly the Building Automation Company) to "reflect more accurately the scope of the operations we can undertake." UT, among other things, has recently begun to offer a device called Infracon, which controls lighting by monitoring voice levels in office spaces.

A project committee on building diagnostics at the Advisory Board on the Built Environment will convene a workshop this month. Its charge will look to the future. Being careful to stress that diagnostics is as dependent on people's knowledge and judgment as on instruments, ABBE Executive Director John P. Eberhard says, "The workshop will identify gaps in instrumentation needs. We will meet with potential instrument manufacturers to test their interest in meeting these needs. Our committee will have identified those instruments and applications that are already available."

Building performance evaluation

Building diagnostics must be linked closely with the concept of building performance evaluation; in order to know whether a problem exists it is necessary first to define normal or acceptable conditions. In cases where building components are leaking, or where other clearly recognizable deficiencies exist, it is not difficult to know there's a problem. But what about when "healthy states" are less well defined and clear?

Some proponents regard diagnostics as the new rallying cry for a complete reinvestigation of building performance. Medical doctors are trained to recognize and classify not only diseases, but also the courses they are likely to follow under a variety of conditions. Shouldn't it be possible to develop the same knowledge for buildings in a variety of areas? This would require a comprehensive attempt to establish rigorous performance criteria and tests against which specific components

and designs could be measured.

A distinction exists in medicine between symptoms—subjective phenomena experienced by a patient and narrated to a doctor—and signs—objective physical evidence of abnormal states, often revealed through use of measurements and instruments. Building diagnostics has been mainly concerned with signs, but perhaps it would do well, as Dr. Safir suggests, to check the prospects for learning from symptoms. Building users can act as highly developed sensing devices and could be better used to generate information. This approach should appeal to the post-occupancy evaluation enthusiasts, who have been showing how occupants can be tapped for a wealth of information on building performance.

Even in areas where measurements are relatively routine and follow well-established procedures, as in the case, say, of indoor air quality, there is little agreement about what acceptable conditions are. In short, there are no standards against which to compare diagnostic results, and the scope of the problem is greatest in such uncharted territory as user satisfaction or worker productivity.

This may explain why building diagnostics is receiving fresh attention in such quarters as the National Academy of Sciences' Advisory Board on the Built Environment and the Oak Ridge National Laboratory, whose efforts are building upon work by a widely acknowledged leader in the field, the Architectural Sciences Division of Public Works Canada. Many of the professionals working in this field have long been associated with efforts to

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LOCATION OR FACTOR	DIAGNOSTIC DEVICES AND TECHNIQUES	COMMENTS
On-site walls	Infrared sensors	Most useful in detecting voids and thermal bridges; many models available.
	Heat-flux transducers	Used to measure heat flow across surfaces; require data recording and skilled users.
	Contact thermometers	Used for measuring surface temperatures; require stable mounting; many available.
	Moisture probes	Placement within walls often difficult; some require placeme of wood sample within wall.
On-site roofs	site roofs Destructive sampling	Requires taking of cored samples at various points; most common and reliable method for moisture detection.
	Infrared, nuclear and capacitance meters	Often require taking of subsequent samples to verify or elab- rate on results; very useful in detecting potential trouble spot
tructure Strain gauges	Strain gauges	Require exacting placement and elaborate monitoring appa- ratus; could be implanted cheaply during initial construction.
	Destructive sampling	Structural integrity cannot be jeopordized; often requires specialized laboratory analysis.
	Fluoroscopy, x-raying and magnafluxing	Most useful for testing welds and connections; also checking for fatigue and flaws; highly specialized equipment and skills necessary.
Temperature	Thermometers	Inexpensive and easily used; many available; data must be read regularly and recorded.
	Thermocouples	Inexpensive but require electronic monitoring; can be implanted in walls, ducts, pipes, etc.
	Pyrometers	Read surface temperatures from a distance; useful for scanning and quick judgments.
ir infiltration Tracer gas	Tracer gas	Tests are inexpensive but apparatus is not; technicians avail able in many areas to do tests.
	Pressurization	Less accurate than tracer gas but useful for general measurements; can be used with infrared equipment to spot leaks in cold months.
Envelope thermal integrity	Simulation	Computer-assisted modeling of weather and systems energy use can yield useful results; many methods available.
Measu	Measurement	Infrared devices and thermocouples can be used; see section "On-site walls" above.
Lighting F	Physical modeling	Scale models very useful and inexpensive for daylighting tests; moderately-priced instruments assist with detailed measurements.
	Multi-point instrumentation	Requires repeated readings over extended periods of time; many sensors usually needed; useful for mockups or reout- fitting tests.
Humidity	Animal hair saturation	Inexpensive and reasonably accurate, but not suited to use delectronic recording devices.
	Gel plates	Commonly used for humidistat controls; inexpensive and routinely used.
	Wet bulb/dry bulb	The standard humidity measurement approach; less accura in high humidity ranges.
Occupant and user behavior Surv	Surveys	Questionnaires and "complaint" records yield useful information; surveys often expensive and time-consuming, but rich idetail.
	Observation	Such factors as tape over duct diffusers, aluminum foil over windows, extra space heaters, propped firedoors and others are indicators; more research needed in this area.

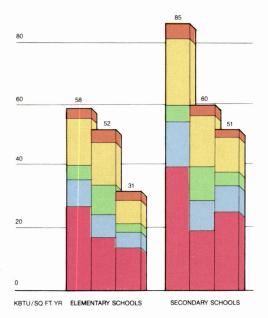
establish more meaningful bases for assessing building performance from a variety of standpoints.

In the end, however, the impetus for developments in building diagnostics may come most compellingly from the direction raised by Francis T. Ventre, writing in December P/A: "Receipts for architectural design and consulting services are a shrinking share of a shrinking market . . . superior technical knowledge has increasingly replaced lore as the primary basis for building decisions. Architects can enhance their contributions . . . through the development of systematic and reliable knowledge about the design and use of environments." Whether by this or any other name, building diagnostics may offer a very promising avenue for just that. \Box

Acknowledgments

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The intermittent usage patterns inherent in elementary and secondary schools resulted in redesign decisions that often increased natural lighting while minimizing conductive gains and losses. Mechanical system controls for idle spaces were also important contributors to a higher than average redesign energy saving.



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In thousands of school buildings, energy conservation retrofits have been financed through the Federal "Schools and Hospitals" Program with funds appropriated by Congress and administered by state governments according to Department of Energy (DOE) regulations. Unfortunately, this (or similar) aid is not available to improve the energy efficiency of new schools in the design stage. The redesign samples of 11 elementary and 11 secondary schools discussed in this article provide examples of how the energy aspects of conventional school construction could be improved.

The intermittent and irregular usage patterns in many school spaces have a significant influence on the selection of energy design strategies. On a daily basis, areas such as gymnasiums, auditoriums, and to some extent, classrooms are not scheduled for continuous occupancy. Often, however, the energy systems serving these spaces are designed or controlled to operate as if they were. Internal loads are influenced by the type of activity within the space as well as by occupancy density, lighting, and equipment usage. When cafeterias are used for social activities—dances, for example—higher sensible and latent loads than those experienced during normal lunch periods are placed on HVAC systems. Schools are often used in summer and at night for adult education or civic affairs. Thus HVAC systems and building design strategies must handle both large and small loads efficiently during variable time periods.

Theoretically, schools should operate between 1400 and 1500 hours per year, including seasonal and summer vacations. Actual school operation can result in closer to 2500 to 3500 hours per year. A major factor in the difference in energy intensity between primary and secondary school types is the longer

hours of operation shown for the latter in Fig. 1. The mean original energy consumption for secondary schools was 85 kBtu per square foot per year, significantly higher than that of 58 kBtu per square foot per year found in the elementary schools. In the energy analysis, these operating profiles were used each week of the year and did not account for traditional seasonal and summer vacations. However, significant usage for other activities may have caused the energy estimates shown in Fig. 2 to be only slightly overstated.

Other design requirements influence energy use. All types of schools require large quantities of conditioned ventilation air. In many school spaces, design occupancy densities of 50 to 75 people per thousand square feet are typical. Ventilation rates are higher than in other building types, often in the range of 10 to 15 cubic feet of air per minute per person. Infiltration can also be a constant source of outside air due to frequent door openings and normal building cracks. In fact, the inrush of hot outside air at the precise time when school lets out has been found to be the cause of peak electric cooling demand in some schools.

The high internal loads experienced in many school spaces such as classrooms, often result in only minimal heating during occupied periods. Therefore, on an annual basis, most heating energy will be used to maintain space temperatures when these areas are vacant. Depending on climate, design strategies that control conduction during intermittent and extended unoccupied periods can be effective.

After HVAC, lighting is the largest energy end use in schools. Because learning spaces can contain various visual tasks, lighting levels are often selected on a "worst case" basis. In many instances, certain school spaces, such as work shops and auditoriums, require multiple lighting systems. The long hours of school building usage also contribute to large artificial lighting energy consumption.

Other major energy users in schools include kitchens, cafeterias, and service hot water for showers. The "process" energy for cooking was not treated in

121 Progressive Architecture 3:83

Redesign strategies

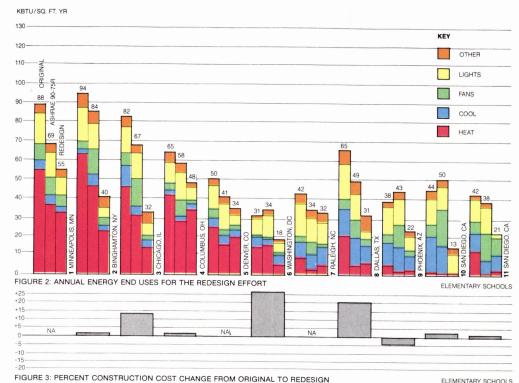
The school redesigns range in size from 11,000 to 276,000 square feet and include neighborhood schools, regional high schools, vocational schools, a business college, and a law school. With the exception of the five-story law school, all buildings are one and two stories in height.

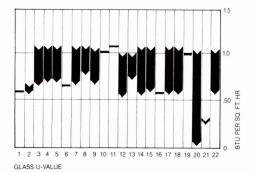
The redesign strategies concentrated on the control of conduction during unoccupied periods, the reduction of artificial lighting energy, and minimizing the conditioning of ventilation air. With these strategies, the elementary and secondary school redesign teams reduced mean design energy consumption by 47 percent and 40 percent respectively.

In the majority of instances, the combination of site, form, envelope, and daylighting strategies led to a markedly different concept for the buildings' form and space organization. Two representative redesign examples are shown in Fig. 1.

Control of heating and cooling loads: Since much of a school's annual heating energy requirements in cold climates are for its considerable unoccupied were periods, conduction losses minimized wherever possible. This particular energy design problem appears to have been considered in many of the original buildings. Original designs located in these climates were already well insulated and major improvements in wall U-values were observed only in the warmer locations. Glass U-values were improved in nearly every instance (see Fig. 4) by upgrading from single to double glazing. In almost all the schools, however, glass area in both the original design and the redesign was generally minimal. In half the buildings, glass area was less than five percent of gross floor area, and in the remainder, all but four were ten percent or less. Protection from vandalism, rather than energy efficiency may have been the major motivation for this.

Berming: The most striking architectural feature in the redesigns was the use of earth berming. As shown in Fig. 4, 15 of the 22 school redesigns increased the percentage of walls below grade in an effort to reduce conduction gains and losses in all climates. In some of the extreme examples, more than 60 percent of the building's wall area was placed below grade. The effectiveness of berming is difficult to assess accurately. The thermal behavior of walls below grade has only begun to be well understood, and is influenced by local soil conditions such as composition and





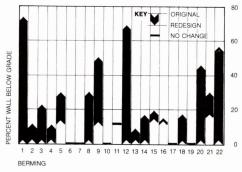


FIGURE 4: ENERGY DESIGN PARAMETER VARIATIONS FOR ALL SCHOOLS

average moisture content. This strategy has the advantage, however, of minimizing the temperature difference between the conditioned space and the exterior wall because of the relatively stable earth temperature below the frost line. Berming did force a change in wall construction, depending on the amount of wall below grade, but there is no evident relationship between overall building cost increases and the use of this strategy (see Fig. 3). For example, in buildings #1, #12, and #22, where the most ambitious berming was observed, the cost data are inconclusive. Where vandalism is of concern, the use of extensive berming can have obvious utility beyond the control of thermal conduction.

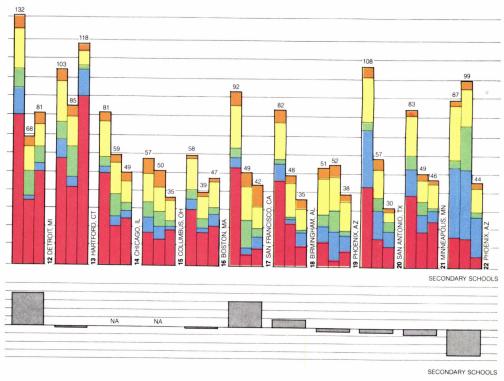
When not placed on the roof for natural lighting (discussed later), glazing was located to the south in cold climates and to the north in the warmer climates in these bermed buildings. Where southern exposure was given to windows, massive masonry walls and direct gain passive solar systems were often employed to further offset unoccupied heating loads by taking advantage of thermal time lags. Glass relocation was often accompanied by solar control measures such as fins, overhangs, and interior shading devices.

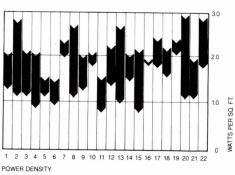
Other conduction control strategies included the use of nonconditioned spaces such as mechanical rooms as buffer zones on the building's perimeter and form compaction. As discussed later, use of exterior buffers often depended on the basic floor plan chosen to implement various daylighting strategies. Compacting the building form to reduce nighttime heat loss was a strategy used in more than one-third of the redesigns, primarily those located in cold climates.

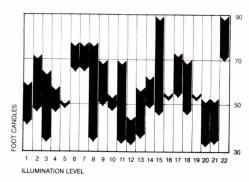
Lighting

In both the elementary and secondary schools, artificial lighting accounted for approximately 20 percent of annual energy use. The substantial lighting energy reductions (see Fig. 2) can be attributed to a reevaluation and sub-









sequent reduction of lighting levels, primarily in classroom spaces. As a result, installed lighting capacity was reduced to approximately 1.5 watts per square foot (see Fig. 4) by simple elimination of fluorescent fixtures.

Natural lighting: In the school redesigns, examples of nearly all approaches to daylighting were found, including clerestories (oriented to either the north or south), monitors, skylights, sunscoops, and windows. Strong relationships between internal spatial reorganization and choice of basic daylighting approach were observed. Of course, the use of daylighting is only one functional criterion in determination of the plan. Designers employing side daylighting for classrooms located on the building's perimeter could use interior circulation to enclose an administration and service core. Those using clerestories, monitors, and skylights often used the building's perimeter to locate buffer zones and placed classrooms on the building's interior.

To accommodate space usage variation, daylighting strategies were accompanied in most instances with multiple switching schemes and photocell controls, which sometimes provided several levels of artificial lighting reduction. Thermal shutters were not used, because of the perceived poor payback at the time of the experiment. The tradeoffs between artificial lighting savings and possible increases in conduction or solar gain should always be assessed. Although the energy analysis computer model was unable to estimate the energy reductions due to daylighting, the solar gains and conductive losses through daylighting apertures were accounted for in the buildings' thermal analysis. The energy results indicate that neither heating nor cooling energy increased due to this strategy.

HVAC strategies

The school redesigns experienced little change from the original HVAC system type selections. Instead, the redesign emphasis was placed on operating and control modifications, control of outside air, and use of heat recovery. However, potentially effective strategies such as modular boilers or plant equipment staging were not used.

The most frequently employed control strategy was the changing of night heating setpoint to 60 F or less and the cooling setpoint to 78 F or more. Daytime heating setpoints were lowered to 68 F in several of the secondary schools, but in only two of the elementary schools. For control of unoccupied space heating, seven-day timeclocks were often installed on hot-water circulating pumps to restrict operation to regular occupied periods, and hot water temperatures were reset to match changing space heating loads.

Ventilation air quantities were reassessed and reduced where practical, which often allowed the use of smaller fan motors. In some instances, controls were installed to keep outside air dampers closed for the morning warm-up cycle, and ventilation fans were interlocked with heating controls to shut them off during unoccupied periods. Kitchen hoods were modified in some schools to provide unconditioned make-up air to the hood exhaust.

Other system strategies included reduction of air system static pressures and the use of evaporative coolers in hot, dry climates. Heat recovery applications in all climates were found in more than one-third of school redesigns. Four of these applications involved heat recovery (double-bundle) chillers used to preheat ventilation air and service hot water. The remainder included exhaust air heat recovery from locker rooms and general building exhaust.

Observations and conclusions

The homogeneity and geographic representation in the school sample adds confidence to the energy effectiveness evident in the redesign solutions. Indeed, the energy savings would have been even greater were it not for the limitations of the energy analysis method for evaluating the widespread use of daylighting strategies. Modifications to building plan, form, and envelope to control conduction not only addressed the dominant unoccupied status of school spaces, but also accommodated a variety of complementary natural lighting and solar control schemes for occupied use. Fundamental architectural concepts were coordinated with well-controlled mechanical systems to meet both full- and part-load conditions efficiently. \square

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Exterior wall testing

Alvin D. Skolnik

As energy becomes more expensive and the environment more corrosive, curtain wall testing has become essential in judging the performance of wall systems.

The testing of metal and glass curtain wall systems to verify their effectiveness in resisting wind and rain has been common practice for decades. More recently, similar testing of new stone or masonry cladding systems has also become commonplace.

In general, laboratory pretesting of wall systems is aimed at evaluating the performance of the wall under exposure to simulated environmental conditions before full-scale production of the wall system begins. An additional benefit of such testing is that, in constructing the test specimen or mock-up, an opportunity is provided to check installation procedures. In some cases, this experience in itself leads to design improvements.

The three performance characteristics most commonly tested are resistance to air infiltration, resistance to water penetration, and structural adequacy. Standard methods for conducting these tests are well established and accepted in the industry. (Refer to Specifications Clinic: "Curtain Wall Performance Specifications" by William T. Lohmann, P/A, Jan. 1981, p. 191.)

Many architects require more severe testing than is called for in the standards. Air infiltration in the standard test (ASTM E283) is measured at 1.56 psf (the static equivalent of 25 mph). Because cold winter winds often exceed 25 mph, the allowable air infiltration (0.06 fm per square foot of surface area is generally permitted for fixed portions of a wall) may be tested at the increased pressure differential of 6.24 psf (the static equivalent of a 50 mph wind).

Resistance to water penetration is generally tested under static (ASTM E331) and under dynamic (AAMA TM-1) pressure loading. Industry standards require that "no uncontrolled water penetration" shall occur under both static and dynamic loading when tested at 20 percent of the design wind pressure. Here again, many architects require more severe testing by specifying that uncontrolled water penetration shall not occur when tested both statically and dynamically at 20 percent of design wind pressure or 12 psf, whichever is greater. There is some controversy in the industry with respect to water infiltration testing. Advocates of the loading values contained in the standards point out that constant high wind velocities rarely occur over a full 15 minutes, the duration of the test. However, they do acknowledge the likelihood of rain occurring with wind velocities higher than those required in the standards.

Testing for structural adequacy (ASTM E330) allows for verification of calculations, even though requirements are readily understood and calculated with reasonable accuracy. Less frequently specified, but of value in some northern states and Canada, is cycled

temperature testing, which can verify the effectiveness of thermal breaks and aid in determining the effect of temperature fluctuations on exterior wall elements. After a specimen has been subjected to full design wind pressure, both positive and negative, and in some cases subjected to cycled temperatures and simulated building frame movement, it is of value to repeat the tests for air infiltration and water penetration. This re-testing will then have been performed when the specimen is more truly representative of the wall condition after the actual building has undergone loading and movement. On occasion, uncontrolled water penetration has occurred upon retesting when it had not occurred initially.

The test specimen should be a faithful representation of the proposed wall system, constructed to illustrate exactly how the wall will be installed on the building. If possible, construction of the test specimen should be carried out by the same personnel who will later install the wall on the building. This will provide a mock-up that is more representative of field workmanship, and it will allow the key workmen themselves to understand the details of construction and any critical aspects of installation. Any modifications incorporated into the specimen as corrective measures during testing (and verified by retesting as being appropriate) must then be included in the final construction.

Assuming that the laboratory is properly equipped to conduct all the standard tests, the major expense of testing is the cost of preparing and instrumenting the test specimen. The difference in cost for conducting an additional standard type test on the same specimen is relatively small. There should be no difference in cost for modifying test loads within the ranges discussed in this article. However, cycled temperature tests are relatively expensive.

The knowlege gained from mock-ups and testing invariably leads to improved design and performance of the wall system. Frequently, deficiencies discovered during the test program are remedied, thus avoiding more costly remedial work on the final building. At the very least, it verifies the suitability of the design and provides an opportunity for the contractor to check out his installation procedure. Therefore, it is reasonable to conclude that the costs for mock-up and testing are readily justified. \square

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Statutes limiting design liability

Norman Coplan

Third-party claims can be brought against architects for negligent design years after a building is completed. Results depend upon judicial interpretation of statutes that are sometimes ambiguous.

One of the most worrisome aspects in the practice of architecture is the fact that a claim for damages may be asserted against an architect of a building many years after its completion. The most common claim of this type is for personal injury at the building site to a third party who claims negligent design. Efforts to limit by statutory enactment the period of time within which suit may be instituted against an architect by such third party, have not run a smooth course. In some states, efforts to persuade the legislature to enact a statute of limitations have been unsuccessful, and in other states that have adopted such a law, the statute has been declared unconstitutional. Even when such a statute is enacted and its constitutionality upheld, the protection that such law presumably was intended to afford can be subverted or defeated by inept statutory draftsmanship or by judicial interpretation. Illustrative of the foregoing is the California case of Evans v. The City of Anaheim, 184 Cal. Rptr. 258.

In the *Evans* case, the court reviewed a California statute that limited the time in which suit could be brought against an architect, engineer, or building contractor arising from a latent deficiency in the design, specifications, or construction of a building

project. This statute provides:

"No action may be brought to recover damages from any person, or the surety of a person, who develops real property or performs or furnishes the design, specifications, surveying, planning, supervision, testing, or observation of construction or construction of an improvement to real property more than 10 years after the substantial completion of the development or improvement for any of the following:

"(1) Any latent deficiency in the design, specification, surveying, planning, supervision, or observation of construction or construction of an improvement to, or survey of, real property.

"(2) Injury to property, real or personal, arising

out of any such latent deficiency . . ."

The plaintiff in this action had sustained bodily injury as the result of a fall through a plate glass door at the Anaheim Convention Center. Among other allegations, the plaintiff contended that the door and the door opening mechanism were defective. Despite the fact that construction of the Center was substantially completed more than ten years before the plaintiff sustained any injury, he instituted a personal injury action against the architect and the contractor for the Center. The primary issue to be determined by the court was whether the statute of limitations, as above quoted, was applicable to actions for personal injury.

The court, in reviewing the statute, stated that it was required to ascertain the intent of the legislature so as to effectuate the purpose of the law. In making such determination, stated the court, it must consider the words which were utilized in the statute, pointing out that the court is required to give effect to statutes "according to the usual, ordinary import of the language employed in framing them." In this context, the defendants pointed out that the statute begins with the language "no action may be brought," and that such language, in accordance with its usual and ordinary import, is broad enough to include an action for personal injury.

The court, however, asserted that all parts of a statutory enactment must be harmonized by considering a particular clause or section in the context of the statutory framework as a whole. Since, concluded the court, the statute expressly provides that a suit for property damage arising from a latent deficiency may not be brought after ten years, but makes no specific reference to a suit for personal injury, it must have been the legislature's intent that personal injury actions were not to be in-

cluded in the ten-year limitation.

The logic of the court's conclusion is certainly debatable. The court, however, did not rest its opinion solely upon its interpretation of the wording of the statute. It examined its legislative history and pointed out that the original bill specifically provided that the limitation period applied to injury or to wrongful death to any person arising out of any latent deficiency. During the legislative process, this particular language was eliminated and the court concluded that such elimination "is most persuasive to the conclusion that the act should not be construed to include the omitted provision." It may well be, however, that the language was omitted as unnecessary, since the statute was broadly worded, and the conclusion that the elimination of express language reflected an intent on the part of the legislature might be criticized as specula-

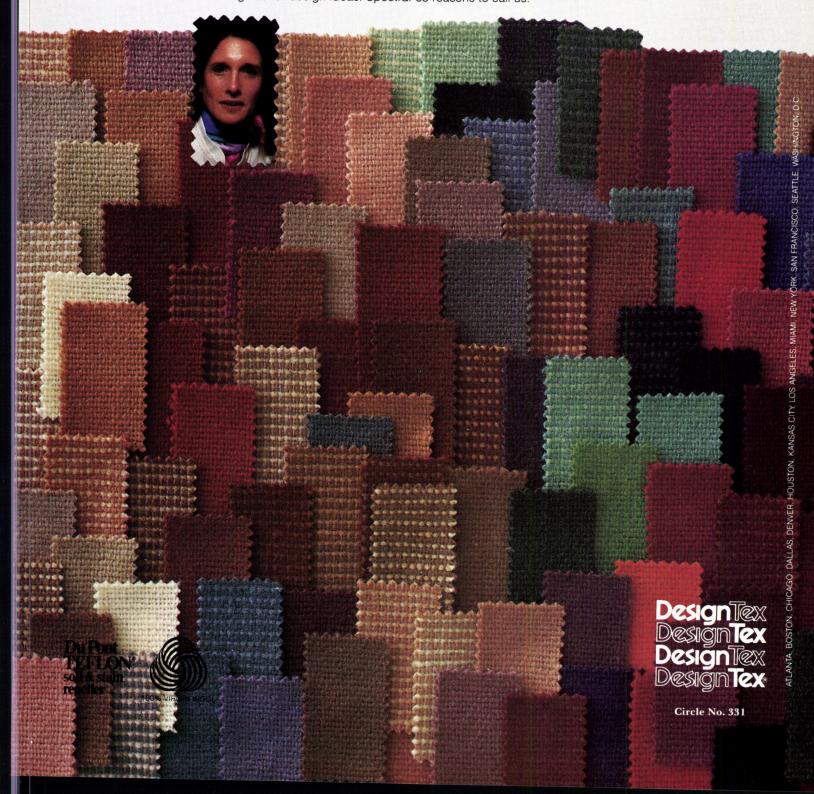
To further support its conclusion, however, the court compared a related statute that had been enacted four years prior to the statute under review relating to actions arising from patent deficiencies. This statute contained a specific provision that the time limitation for the institution of suit in respect to patent deficiencies applied to cases arising from personal injury or wrongful death. The court said:

"Where a statute, with reference to one subject contains a given provision, the omission of such provision from a similar statute concerning a related subject . . . is significant to show that a different intention existed."

Norman Coplan, Hon. AIA, is a member of the law firm Bernstein, Weiss, Coplan, Weinstein & Lake, New York.

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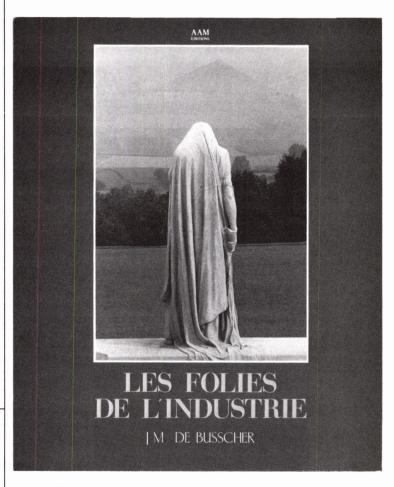
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On war memorials

Books



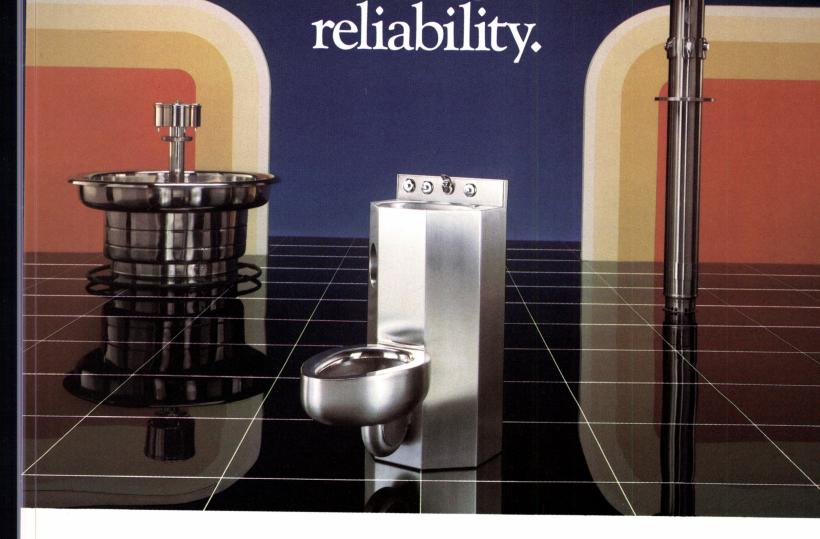
Les Folies de L'industrie (in French) by J-M de Busscher. Brussels, 1981, Archives d'Architecture Moderne, 280 pp, 160 pp of illus, BF1200.

Reviewed by Elizabeth Grossman, assistant professor of architectural history, Rhode Island School of Design.

According to the radical architects of the 1920s, World War I made the ultimate case for a Modern architecture. Given a belief in an indissoluble connection between history and architectural style, the four years of slaughter in the trenches "proved" the bankruptcy not only of the established social order but also of the historical styles.

In the post-war years while some artists worked to create a "new" architecture, the governments of the previously warring nations commissioned other architects and sculptors to design war memorials—hundreds of them. The French put up national monuments and local ones in villages, towns, and cities, as well. The British Imperial War Graves Commission erected Memorials to the Missing, and individual countries of the Empire financed their own large-scale battlefield monuments. The United States, which fought for little more than a year, constructed 19 memorials and chapels in Europe.

Symbols of national corruption for the radicals, the monuments and chapels quickly became places of pilgrimage, ritual, and tourism. The popular press covered the visits of veterans, widows, and Gold Star Mothers, as well as the national ceremonies held in the cemeteries. Today, the national rail system of France includes the memorials in its travel literature, and the Michelin guides assign them stars. Now with the contemporary architectural interest in Neo-Classicism in general, and Between-the-Wars Historicism in particular, [Books continued on page 162]



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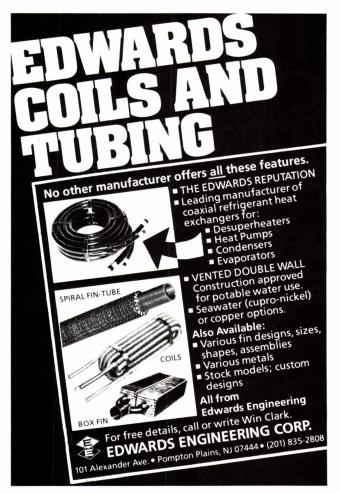
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Paul Cret, American Memorial, Chateau-Thierry, France.

these monuments are enjoying a Post-Modern rehabilitation. Gavin Stamp's Silent Cities exhibition at RIBA in 1977 gave the work of the Imperial War Graves Commission, and especially Lutyens' incredible architecture, a sympathetic airing with photographs which were, for the most part, official and of the period. Les Folies de L'Industrie is something quite different. Not only does this book include memorials and cemeteries erected on the European continent by all the Allied nations and Germany, but its 160 photographs of the monuments are extraordinary. They reflect the special sensibility of author J-M de Busscher, a Belgian journalist and iconoclast.

The cover of Les Folies de L'Industrie keys the book. Centered in a glossy field of viridian green is a photo of a heavily draped colossal figure, which stands, back to the spectator, transfigured in a sunset glow. Beyond, a lawn, a bank of trees, and then farmland recede to a pyramidal shape dimmed by a mauve haze. The figure is a detail from Allward's Canadian war memorial at Vimy Ridge. The pyramid is an industrial waste heap. This image explicates the title and polemic of the book. In radical ideology, these war memorials are the by-product of the "first industrial war." For de Busscher, they are also recherché, or perhaps outré, reminders of another genre of folly, the 18th-Century garden piece and maison de plaisance.

Thus seduced and/or forearmed, the reader can proceed. De Busscher has photographed most of the major national monuments from various vantage points. The photos emphasize the national significance of the war memorials. A two-page photograph of the Belgian monument to King Albert at Nieuwport, worked in brick relief, is at the exact center of this Belgian book. The American Doric monuments at Montsec and Montfaucon look ineffably serene. The crusader's tower of the French ossuary at Douamont glowers above wet macadam. The British work is both precisely Classical and terribly weighty. The photographs do not fabricate these national distinctions, but cleverly intensify them.

De Busscher has several genres. His views of the military cemeteries are mostly an Impressionist's study of time and season. At Notre Dame de La Tourette, the back-to-back crosses glow with the romance of l'heure bleu. The American graves at Meuse-Argonne are only a blur beyond the etched blackness of the skeletal plane trees. His most untoward photographs are of the sculptural monuments. Here the images seem calculated to emphasize the bizarre, the lethal, the sensual, and the lyrical. Usually he gives each work its own subtly inappropriate beauty, but sometimes, as in the case of the details from the French memorial at Navarin farm and the American monument by McMonnies, he relies on juxtaposition for ironic commentary.

De Busscher's photographs are so much a product of his own sensibility that they can sometimes obscure the actual character of the monuments. For example, he has cast Paul Cret's memorial at Chateau-Thierry in a Speerian mold, as his caption says, although Cret had designed it by 1927. With more awareness of chronology, de Busscher might have emphasized the Art Deco character of the monument so we would see in it a French afterglow of the 1925 Paris World's Fair. Just as misleading is his forced perspective, close-up

[Books continued on page 164]

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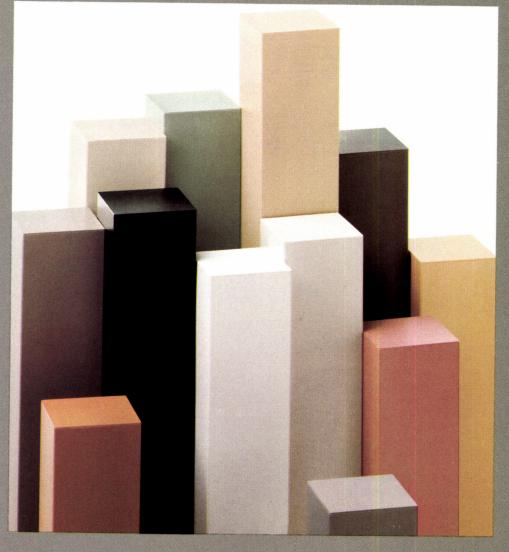
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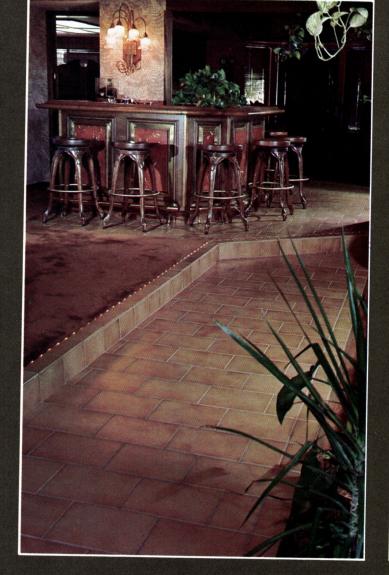
Edwin Lutyens, British Memorial, Thiepval, France.

view of George Howe's chapel at Bony. As de Busscher would have it, this small building can almost hold its own against the awesome mass of Lutyens' Thiepval on the opposite page. A more informative and astute photograph would have shown the chapel in the context of the cemetery. There it would have appeared, as *Howe* intended, as a tough, yet ultimately ineffectual anchor for the graves.

All the photographs have captions that identify the work by name, location, and artist (not always correctly, e.g., Swartwout not Ellett designed Montsec, Baker not Lutyens did the South African monument at Delville Wood). The author also gives the country, but not the actual client that erected the monument. Most of the photographs also carry epigrams. Some are simplistic and comprehensible to readers with only minimal knowledge of French. The longer more subtle ones are usually excerpted from the text, which is luxuriously printed and written in fast-paced, idiomatic, not always "polite usage" French.

Readers who are up to it will probably find de Busscher's idiosyncratic combination of personal reminiscence, incredible "war stories," and wide-ranging politico-economic speculations on the *raison d'etre* of war memorials more exposé than instructive. The suggestive national typological schemas in Chapters four & five are the closest he comes to analyzing the monuments. The footnotes give tone. The bibliography includes works by Barthes, Aries, Nietzsche, Churchill, and Speer, but no sources on the architecture itself. There is no index; the photographs are not numbered, nor are they arranged in any obvious order.

De Busscher and his publisher AAM have given us neither a documentary nor a historical interpretation of the World War I memorials in Europe. The "New Historicists" associated with AAM editor Maurice Culot prefer their architectural precedents cleansed of history. In the past, institutions like the Ecole des Beaux-Arts rendered the past down to "elements of architecture" so it could be more easily reused. Perhaps Culot's new school (P/A, Sept. 1982, L'Institut Français d'Architecture, "Le tute Paris") will perform this alchemy in the future. For the moment we can rely on talents like de Busscher to transmute history by personal sensibility.



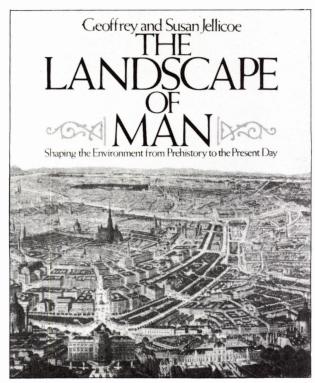


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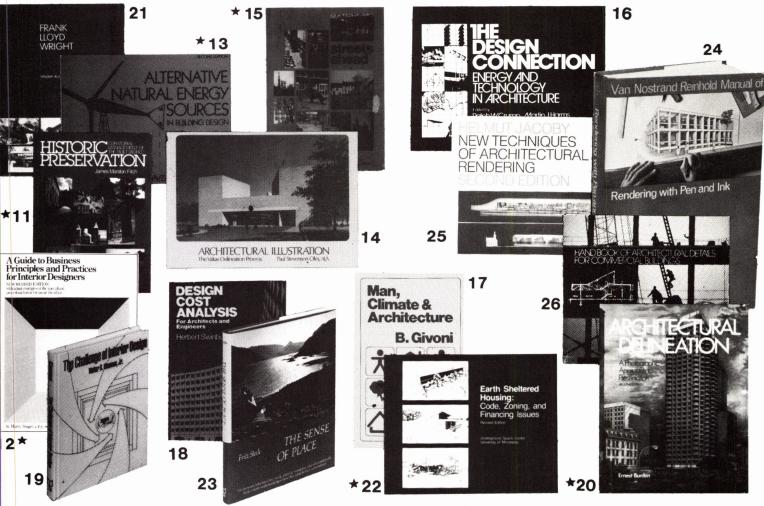
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Portable digital thermometers, designed for field use, withstand transportation and provide accuracy and repeatability. Models are available that measure -40 F to +250 F, -40 C to +250 C, -99 F to +999 F, -99 C to +999 C, -200 F to +1999 F, and -130 FC to +1200 C. "K" type interchangeable thermocouple probes are available for air, liquid, surface, and wet-bulb measurements. IMC Instruments.

Circle 231 on reader service card

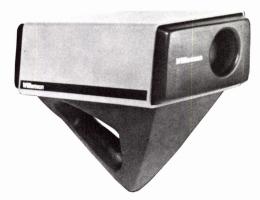
Irreversible temperature indicators measure, monitor, and record temperatures from 105 F to 500 F (40 C to 260 C) on inaccessible or hazardous machinery and equipment. White thermosensitive areas turn permanently black when rated temperature is exceeded. CelsiStrips® are available in five-level series in eight temperature ranges and eight-level series in five temperature ranges. CelsiDot® and Celsipoint® labels have one level. Solder Absorbing Technology, Inc.

Circle 232 on reader service card

Temperature monitoring panels 7104 and 7106 are 4-point and 6-point lowcost digital temperature indicators for heating, air-conditioning, and process temperatures. Remote measurements can be made up to 1000 feet away from the panel with thermocouple wire. Probes are available for temperature measurement of gases, liquids, surfaces, and semisolids. There are also 12-point (7112) and 24-point (7124) panels. They operate on 60 Hz alternating current with normal voltage of 24 or 115 Volts. They are designed for surface or recessed mounting. IMC Instruments. Circle 233 on reader service card

Thermocore infrared analysis system evaluates roofs and exterior walls for heat loss. Tremco's inspection service that uses the system points up specific areas of heat loss and confirms properly insulated areas. A written report provides an overview of the building's general conditon and makes recommendations for correcting problem

areas. Tremco. Circle 234 on reader service card



ViewTemp portable thermometers are noncontact temperature used for monitoring of steam lines to detect steam loss. Besides having applications in processing and manufacturing, they can be used in hospitals where steam is used for sterilizing, cooking, and washing; in laundries where steam is needed for washing and pressing; and in large buildings that use steam for heating. Early detection of steam loss improves efficiency and helps to prevent increased fuel costs. Williamson Corp. Circle 235 on reader service card

The Wet Roof Detector, a nondestructive electronic conductance instrument, detects the presence of moisture in the thermal insulation layer of a built-up roof. If moisture is present between plies, the depth scale indicates the precise level, according to the manufacturer. Applications include finding the source of leaks, detecting the presence of condensation within roof insulation, confirming that roof insulation is dry before new work is to be done, and locating wet areas when reroofing. Tramex Electronics, Inc. Circle 236 on reader service card

Literature

HVAC temperature sensors for energy monitoring and control are described in an eight-page bulletin, RT-7. Products include resistance thermometers, transmitters, and accessories. The sensors can monitor room air, outside air, duct air, and heat exchange fluids. The brochure has descriptions and detail drawings of each item and includes general specifications. Minco Products, Inc. Circle 237 on reader service card

[Literature continued on page 171]







Temperature, humidity, and pressure recorders are described in a full-color 12-page catalog, No. 825. Application information and detailed specifications are included. A new temperature/humidity recorder is featured, and distant reading and self-contained temperature recorders, stem- and wall-mount pressure recorders, and electrical event recorders are also covered. The Dickson Company.

Circle 238 on reader service card

Instrumentation catalog, 48 pages, covers several kinds of sensors for measuring temperature, wind velocity, gas pressure, rotational speed, sound levels, and voltage levels. Each instrument is illustrated and described, and specifications are included. Davis Instrument Manufacturing Company.

Circle 239 on reader service card

Multi-Material Moisture Detectors bulletin describes and illustrates several types of instruments for measuring moisture content of wood, plaster, concrete, and other building materials. Applications, capabilities, and price of each meter are included. PRG.

Circle 240 on reader service card

'Getting Down to Earth' (Fourth Edition) is a 52-page pocket-size manual on ground resistance and its measurements. It discusses basic definitions, principles, test methods, techniques for improving earth resistance, and factors affecting earth resistance. The manual is illustrated with photos, diagrams, and charts showing applications, typical conditions, test results, and other data. To obtain the manual send \$1 to James G. Biddle Co., 510 Township Line Road, Blue Bell, Pa. 19422.

Other products

Rough-Sawn Micro-Lam® beams are suitable for cathedral ceilings, basements, and other exposed structural beams in residential construction. They are accepted for structural use by major building code agencies, FHA, and HUD. According to the manufacturer, they will not shrink, and resist twisting,

splitting, and checking. Two of the 1¾-in. thick beams provide the necessary 3½-in. width to match wall framing. They are available in 9½-in., 11½-in., and 14¼-in. widths and can be precut in any length up to 80 ft. Trus Joist Corp. Circle 241 on reader service card

Classics drafting room furniture is designed with space-saving features for the smaller office. It consists of drafting, reference, and light tables with built-in options such as tool and file drawers, sliding reference tops, and roll files. The group also includes a full line of filing cabinets. Mayline Company. Circle 242 on reader service card

The 70U Luxalon ceiling consists of steel panels clipped to suspended steel carriers. It is engineered to withstand impact of sports balls and has excellent sound absorption properties, according to the manufacturer. The ceiling is corrosion resistant, fire resistant, and dust-free. It is also available in aluminum and is suited for swimming pools and exterior canopies. Hunter Douglas, Inc., Architectural Building Products.

Circle 243 on reader service card

Taos wallcovering of flame- and stainresistant textured vinyl has a matte finish. It is 54 inches wide and has a Class A fire rating from Underwriters Laboratories. Taos comes in 21 shades with custom colors available on orders of 300 yards or more. Vicrtex, L.E. Carpenter & Co.

Circle 244 on reader service card



A kitchen sink with deep double basins, designed by Heinrich Feldhege, is made of seamless formed steel finished in a choice of 32 porcelain enamel colors. The finish is acid resistant and impactproof. It has a raised rim that reduces splashing. The faucet is center mounted between the basins, and either drain will accept a waste disposal unit. Kroin Architectural Complements. Circle 245 on reader service card

Terrace doors of ponderosa pine that operate with hinges eliminate jamming problems sometimes encountered with sliding doors. The doors are available double- or triple-glazed and have foam-filled weatherstripping to inhibit air infiltration. Sills are made from GE's Lexan said to have high insulating properties. The doors are available in 6'8" and 8' heights. Marvin Windows.

Circle 246 on reader service card [Products continued on page 176]



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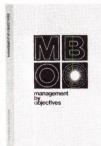
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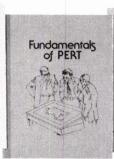
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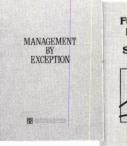
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This year, P/A's special April issue on energy has been expanded in scope to cover the broader field of resource conservation. Included in the issue will be articles on the architect's role in important environmental concerns related to energy:

- water conservation
- power conservation
- air quality conservation

State-of-the-art buildings chosen by P/A's editors for this issue are all impressive for their integration of energy concerns with high levels of functional and formal accomplishment. Among them will be:

• a sleek corporate office building in which all-glass walls are the key to extraordinary energy performance:

energy performance;

• a multifamily housing development with collectors integrated into domestic-scaled forms:

• a fine state office building constructed under California's unique energy-conscious building program: Atrium, Princeton Professional Park, Princeton, N.J. Joint venture architects: Harrison Fraker, Architects, and Short & Ford.

Energy-conscious lighting will be the subject of an Interior Technics feature covering the latest strategies and devices.

A roundtable discussion based on P/A's current series of DOE-sponsored energy-conscious design analyses will present reader reactions along with a summary of the program.

P/A News Report will bring readers up to date on energy developments and accomplishments in energy-conscious design.

P/A in May will be devoted largely to two subjects: a survey of recent architecture from Japan, with outstanding examples of that nation's wide variety of design attitudes, and a full report on P/A's Third Annual Furniture Competition.

Progressive Architecture 3:83

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Products continued from page 171

The Architect's Business Manager™ is computer software that enables the architect to monitor projects. The four divisions are: Job cost, which maintains expense, billing, and accounts receivable information about each job and client; Payroll, which computes and prepares payroll checks and reports; Accounts payable, which enables the architect to enter vendor invoices into payables, job costs, and general ledger before they are paid; and General ledger, which accumulates data for financial reports. The system operates on the Apple II and Apple III computers. Architectural Computer Software.

Circle 247 on reader service card

A dock leveler in an exclusive Snap-In® design may offer owners the opportunity to depreciate it as personal property within five years instead of the ten years required to amortize built-in dock levelers, according to the manufacturer. The snap-in levelers are available in both mechanical and hydraulic models. They are easily removed for maintenance and then reinstalled. Blue Giant Equipment Corp. Circle 248 on reader service card

Panic exit devices in the 1190 series are surface applied and have a concealed vertical rod for top and bottom latching. The series is UL listed for panic exit applications. The devices can be used on new or existing hollow metal, wood, or aluminum doors for safety egress. Dor-O-Matic Divsion, Republic Industries, Inc.

Circle 440 on reader service card

Babson wallcovering, from the Innovative Concepts collection, is a trompe l'oeil grass cloth with companion fabric. Styled by Jack Foley, it comes in three colorways: sienna and umber, washed pebble and peach, and sky and sand. There are 21 designs in the collection, many with coordinated prints and companion fabrics. W.H.S. Lloyd/Reed Wallcoverings.

Circle 441 on reader service card

Other literature

Fantom Flex "undercarpet wiring catalog, 12 pages, describes and illustrates components of the system: flatwire cable, metal top shield, 3-conductor and 5-conductor feed boxes, pedestals, and accessories. The cable can be fed from surface-mounted, flush-mounted, and floor-mounted boxes. According to the manufacturer, it has the same load capacity as round wire and installs faster. It is listed for use in damp locations. The Wiremold Co., Electrical Div. Circle 442 on reader service card

'Interior Practice,' a 10-page chapter from The Architect's Handbook of Professional Practice, is intended to assist architects to develop and improve interior design services not usually included in

normal training. It is available as a separate handbook and addresses those services needed to complete interior spaces in new and existing buildings. For a copy of "Interior Practice," send \$1.65 (AIA members) or \$2.35 (nonmembers) to AIA Service Corp., Fulfillment Div., 1735 New York Ave., Washington, D.C.



The Medallion 82 Collection for libraries comprises chairs, tables, study carrels, bookstands, racks, and card catalog cases. The collection is offered in red oak or maple, and table tops are of wood or high-pressure laminate in matching wood design or solid colors. An eight-page brochure illustrates the collection in color and provides descriptions. Library Bureau, Inc.

Circle 443 on reader service card

Seating for the hospitality trade is covered in Oggo Catalog IV. There are contemporary and traditional styles, with or without arms; with wood, rush, or upholstered seats; and in table, counter, and bar heights. The Oggo Corporation.

Circle 444 on reader service card

Bathroom accessories catalog 800 offers grab bars, shower seats, shower rods and curtains, railings, and accessories. New finishes include metallic plating, such as copper and pewter, and bright epoxy coatings. A chart shows grab-bar requirements for each state. The Yield Safe[®] method of installation for safety and vandal resistance is featured in this 32-page catalog. Also included are special packages to meet requirements for the handicapped. Tubular Specialties Mfg., Inc. Circle 445 on reader service card

Access flooring brochure describes the Tate system: floor covering, ConCore[™] composite floor panel, steel floor panel, the understructure, and accessories. The 20-page brochure discusses benefits of access flooring and HVAC savings and illustrates components of the system. Functional and product specifications are included. Tate Architectural Products, Inc.

Circle 446 on reader service card

'The Incredible Portable Panel' describes Spacesetter[™] floor-to-ceiling panels that can be positioned as easily as [Literature continued on page 178]

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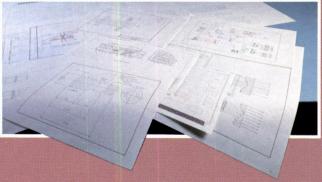
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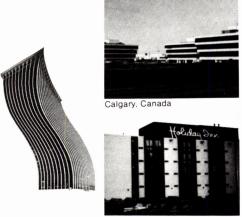
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Circle No. 396 on Reader Service Card

Literature continued from page 176

placing furniture, says the manufacturer. They help to solve unanticipated problems of noise, traffic, or a need for privacy. The panels are easy to relocate when space needs change. The 12-page brochure discusses how the panels are installed and shows how quickly they can create space changes. Modernfold. *Circle 447 on reader service card*

'To Save a Life' is a 16-page guide to smoke-actuated door control. It covers the most economical means of achieving life safety and property protection. Topics include techniques of smoke detection and smoke-actuated door control, compartmentation, smoke towers, smoke detectors, electromagnetic door operators, and multizone control. HUD life safety standards for nursing homes, housing for the elderly, and multifamily housing are also discussed. Rixson-Firemark.

Circle 448 on reader service card

Clerestory control design data, an eight-page brochure, offers specifications for manual or motorized controls to operate high or inaccessible metal or wood windows. The controls can be installed in new construction or in older buildings to conserve energy and manage windows. They replace bulky hardware or poles that can damage windows. Clearline Incorporated. Circle 449 on reader service card

Industrial noise control panels, systems, and enclosures are discussed in a packet of three four-page brochures. Acoustical control panels provide noise control for machinery and equipment enclosures, computer control rooms, and similar areas. Removable acoustical control panel systems offer easy installation and can be relocated. Preassembled relocatable acoustical enclosures are self-contained units, completely prewired and painted, ready to be set in place. United Sheet Metal. Circle 450 on reader service card

Building materials

Major materials suppliers for buildings that are featured this month as they were furnished to P/A by the architects.

831 Pacific Street Condominiums, Santa Monica, Calif. (p. 110). Architects: A Design Group, Panorama City, Calif. Carpet: Stratton Industries. Ceramic tile: American Olean Tile. Windows: High-T. Acrylic dome: Bristolite. Roofing: Mer-Kote. Paint: Dunn-Edwards. Locksets: Hardware: Ironmonger. Schlage. Estrella (Italy). Intercom: Cabinets: Aiphone. Lighting: Hubbell, Halo. Plumbing: American-Standard. heating: Carrier. Lamps/portable lighting and dining table: Ron Rezek Lighting. Blinds: Levolor.

Martineau Walker offices, Montreal (p. 118). Architect: Peter Rose Architect with

Erich Marosi, Montreal. Paint: Pratt & Lambert. Oak flooring: Lamparquet. Carpet: Peerless Carpet. Marble flooring: T. Vecchino. Ceramic tile: Maple Leaf Tiles. Secretarial workstations: Croydon. Custom reception desk and board room table: P&R Desjardins.

Dr. and Mrs. Phillip T. George residence, Coral Gables, Fla. (p. 122). Architect: Spillis Candela & Partners, Coral Gables. Waterproofing: Scotch-Clad. Insulation: Johns-Mansville. Locksets: Schlage. Handrails: E & J Metal Craft Corp. Lighting: Lightolier. Bath equipment: American-Standard.

Houses for Dixon Wallace Christian, Coconut Grove, Fla. (p. 126). Architect: Spillis Candela & Partners, Coral Gables. Epicore steel deck units: Epic Metals Corp. Windows, doors: Yale Ogron. Skylights: Continental Glass. Wood doors: Gator Millwork. Cuban tile: Tropic Cuban Tile. Waterproofing: Scotch-Clad. Insulation: Johns-Manville. Paint: MCI Corp. Security alarm: Ademco. Handrails: Coral Welding. Lighting: Lightolier. Bath equipment: American-Standard, U.S. Plumbing Prod. Air conditioning: Air Temp.

Mud Island Park, Memphis, Tenn. (p. 130). Architects: Roy P. Harrover & Associates, Memphis, Tenn. Architectural concrete: (buff) Penn-Dixie and Texas Industries; (gray) National and Portland. Wood trusses: Southern Laminators, Inc. Steel joists: Wulcraft. Metal walls: Inryco and Varco-Pruden. Steel windows, interior doors, and some entrance doors: American Metal. Other entrance doors: Continental Metal. Overhead doors: Continental Metal. Overhead coiling doors: Atlas Door Corporation. Brick: London Tiles, Inc., Whitacre-Greer. Slate: Buckingham-Virginia Slate Corporation. Linear metal ceiling: Hunter Douglas and Nicholas-Homeshield. Acoustic Owens-Corning. Built-up roofing: Johns-Manville. Metal roofing: Vincent Brass and Aluminum, Berridge Manufacturing Co. Waterproofing: Celotex Corporation. Sealants: Woodmont Products, Inc., Tremco, Mameco. Gypsum board: Temple. Steel studs: Chapman Industries. Paint: PPG Industries. Mortise hinges: Stanley. Locksets, door closers, and panic exit hardware: Corbin. Storage lockers: Hallowell. Pedestal seating: JG Furniture. Amphitheater seating: Mircle. Elevators: Dover. Escalators and moving walk: Westinghouse. Lighting: Lightolier, Day-Brite, Marco, Prescolite, Sterner, Litnonia, mcPhilben. Plumbing fixtures: American-Standard. Toilet stalls: The Mills Company, General Partitions. Washroom accessories: American Dispenser, Specialties, Inc. Accessory Sunroc, Halsey Water fountains: system: Grinnell. Taylor. Sprinkler Precision Parts Corporation. Boilers: Chillers and air handlers: Trane. Cooling tower: Baltimore Aircoil Company. Playground equipment: Timberform. Transit system: VSL Corporation. Floating docks: Meeco Marinas, Inc.



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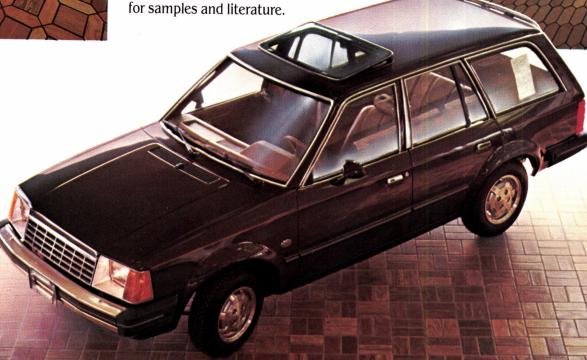


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Triggered by the computer and its ability to transfer funds electronically, all of this changing competition is clearly to the consumer's credit. And confusion. You need a score card (like the one below) to tell the players.

BY JAMES E. BRAHAM

The "cash management revolution," as Merrill Lynch terms this dizzy diversification, was kicked off by the Cash Management Account (CMA) it introduced in 1977. It has spurred a similar offering from just about every other major brokerage, and now the banks and money market funds are joining the act.

With over 900,000 clients, and still growing rapidly, the CMA dwarfs its competitors—and its trademark name

so perfectly describes the service that many financial people call all such offerings "cash management accounts." Another common name is central assets account.

Call it what you will, a cash management program has five main components: A brokerage account, a high-yield money market fund (or funds) into which idle cash generated from securities transactions is automatically deposited or "swept," a bank checking account, a credit or debit card, and a line of credit, usually in the form of a margin loan against

Cash management score card						
Brokerage Account	Minimum opening deposit	Annual fee	Card	Timing of sweeps into money fund		
Advest's Reserve Cash	\$10,000 cash and/or securities	\$25	VISA (debit)	\$1,000 or more, daily; less than \$1,000, weekly		
Dean Witter Reynolds' Active Assets	\$20,000 cash and/or securities	\$30	VISA (debit)	All amounts, daily		
A. G. Edwards' Total Asset	\$20,000 cash and /or securities	\$30	VISA (debit)	\$500 or more (or proceeds from securities sales), daily; less than \$500 (and interest and dividends), weekly		
E. F. Hutton's Asset Management	\$10,000 cash and/or \$20,000 securities	\$100	American Express Gold (credit)	\$1,000 or more, daily; \$100 to \$1,000, weekly; less than \$100, monthly		
Edwart D. Jones' Daily Passport Full Service	\$1,000 cash	None	VISA (debit)	\$1,000 or more, daily; \$100 to \$1,000, weekly		
Kidder, Peabody's Premium	\$25,000 cash and/or securities	\$75*	VISA in Gold (debit)	\$1,000 or more, daily; less than \$1,000, weekly		
Merrill Lynch's Cash Management	\$20,000 cash and/or securities	\$50	VISA (debit)	\$1,000 or more, daily; less than \$1,000, weekly		
Paine Webber's Resource Management	\$15,000 cash and/or securities	\$100	Gold MasterCard (credit)	\$500 or more, daily; under \$500, weekly		
Prudential-Bache's Command	\$20,000 cash and/or securities	\$50	VISA (debit)	\$1,000 or more, daily; less than \$1,000, weekly		
Charles Schwab's Schwab One	\$1,000 cash or \$5,000 securities	None**	VISA (debit)	***		
Shearson/American Express's Financial Management	\$25,000 cash and/or securities	\$100	American Express Gold (credit)	\$1,000 or more, daily; less than \$1,000, weekly		
Smith Barney's Vantage	\$20,000 cash and/or securities	\$100	American Express Gold (credit)	\$1,000 or more, daily; less than \$1,000, weekly		
Thomas McKinnon's Asset Director	\$20,000 cash and/or securities	\$30	VISA (debit)	\$100 or more, daily; less than \$100, weekly		

—plus \$5 a month if account falls below \$10.000 because of withdrawals: \$10 a month if account falls below \$5.000.

**—\$5 a month if account falls below \$10,000 in credits or in margin debits.
***—No money market fund. Account balance draws interest at least equalling 13-week Treasury Bill rates





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MANAGEMENT

securities. A comprehensive monthly statement summarizes all of these transactions for planning, recordkeeping, and tax purposes.

Not for everyone. The chief target for these programs is what brokers call the "upscale, active investor." Most accounts require an initial investment of around \$20,000 in cash or securities, although a couple of them can be opened for as low as \$1,000 (and most institutions do not insist that any minimum balance be maintained after opening). The average CMA at Merrill Lynch has assets of \$65,000, with some \$23,000 of that in money funds.

"No, they're not for everyone," says Richard J. West, dean of the Amos Tuck School of Business Administration at Dartmouth College and an adviser for Merrill Lynch's three CMA money funds. "But for executives, who have need for a brokerage account with a margin account, and a credit card, and a money market-type mutual fund, the combination is fantastic."

Robert L. Thomas, vice president of the Advest Group brokerage, Hartford, Conn., says of the Advest Reserve Cash Account: "You have less to do to make sure your money is operating efficiently for you. And when you're a borrower, rates are likely to be cheaper than at a bank."

Elaine Hart, vice president and director of marketing for Shearson/ American Express Inc.'s Financial Management Account (FMA), calls its chief attraction "the ability of the client always to have his money working the hardest . . . and when you access the account for cash or purchases through the American Express Gold Card, it automatically uses the client's cheapest money first [available cash before money market fund shares]."

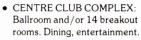
The majority of cash management programs feature a VISA debit card—which is like a credit card in appearance only. Whereas a creditcard purchase makes use of a loan extended to you and is subject to interest, a debit-card purchase is similar to writing a check—the purchase is quickly deducted from your account.

The debit card is also used for obtaining cash advances, for which its supporters claim more convenience than a credit card. "Most of our [CMA] customers use plastic for cash advances while traveling. They like a

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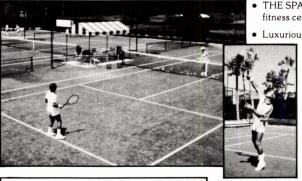
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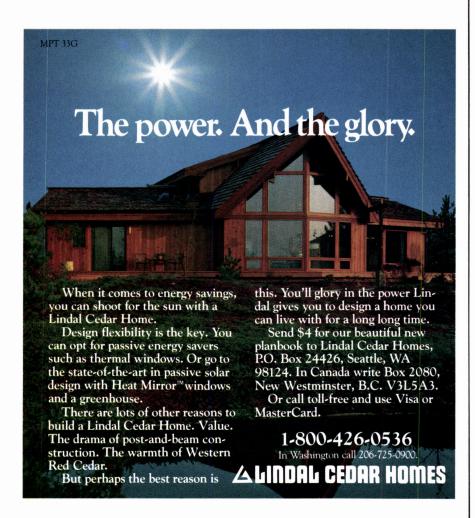
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MANAGEMENT

debit card," says Nan Meyer, director of marketing communications for Merrill Lynch.

Clean sweep. Another factor to consider when selecting one of these accounts is how idle funds are swept automatically into the money fund-or funds, since most cash management programs offer a choice among a general-purpose fund, a government securities fund, and a taxexempt fund. Dean Witter Reynolds Inc., the Sears subsidiary whose Active Assets Account is a distant second to Merrill Lynch's CMA in size (Dean Witter was also second to enter the market, in late 1981), provides the quickest sweep, depositing all idle cash daily.

There are other features to weigh. E. F. Hutton & Co. Inc. and Paine Webber return checks at no charge. Prudential-Bache Securities offers membership in a national discount buying service. Dean Witter offers check-cashing at Sears stores. Merrill Prudential-Bache, Shearson/American Express insure securities up to \$10 million.

While most accounts do not restrict the number of checks or the minimum amount required, they generally intend the checks to be for major transactions, not as a substitute for a household checking account. The typical CMA client writes four checks a month, averaging \$650 each.

Bank programs. Cash management programs are available now at a growing number of banks, too. Citibank, New York, offers its Asset Network Account in connection with Quick & Reilly Inc., a New York discount broker. The minimum needed to open an account is \$10,000; the annual fee is \$144. In California, Crocker Bank's Working Capital Account is affiliated with Bradford Broker Settlement Inc., New York. The minimum opening deposit is \$20,000 and the annual fee is \$70.

Some investors will prefer the bank programs. William Wyman, senior partner at Booz, Allen & Hamilton Inc., a New York management consultant, cites the convenience of banks, particularly their automaticteller machines. Most executives, however, are likely to favor the cash management programs offered by the full-line brokers because of the investment advice and research they of-



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gree or its equivalent in interior design or architecture, plus at least one year's professional design experience required. Teach both in the design studio and in one of the following academic areas: Systems Technology, Methods and Materials, History of Interior Design. Send resume by April 1, 1983, illustrations of design work and brief statement about your interest in the field of interior design and its relationship to architecture to: John Meunier, Director, School of Architecture and Interior Design, University of Cincinnati, Cincinnati, Ohio 45221. Equal Opportunity Employer.

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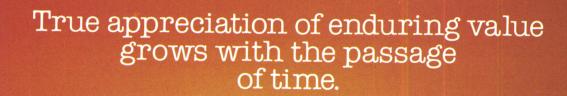
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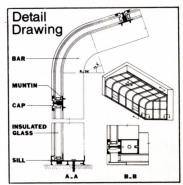


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